```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 gtcgacccacgcgtccgcgg.....aaaaaaagggcggccgcta 2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-003-690-1
2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             April 21, 2003, 19:25:40; Search time 5085.18 Seconds (without alignments) 17054.732 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2054640 segs, 14551402878 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenEmbl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_pr:*
                                                                                                                                          em_htg_hum:*
em_htg_inv:*
em_htg_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                gb_un:*
gb_v1:*
em_ba:*
em_htgo_hum:*
em_htgo_mus:*
em_htgo_other:*
                                                                                           em_htg_mus:*
em_htg_pln:*
em_htg_rod:*
                                                                                                                                                                                                                                                      em_ph:*
em_pl:*
                                                                                                                                                                                                                                                                                                                                                                   em_hum:*
em_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            b_ov:*
                                                                                                                                                                                                                                       em_ro:*
                                                                                                                                                                                                                                                                                    em_pat:*
                                                                                                                                                                                                                                                                                                     em_ov:*
                                                                                                                                                                                                                                                                                                                    em_or:*
                                                                                                                                                                                                                                                                                                                                   em_om:*
                                                                                                                                                                                                                                                                                                                                                     em_mu:*
                                                                                                                                                                                                                                                                                                                                                                                                  em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_ro:*
                                              em_htg_vrt:*
em_sy:*
                                                                              em_htg_mam:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4109280
```

Pred. No. is the number of results predicted by chance to have

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

45	44	43	. 42	. 41	40	39	38					ω ω	32	۳.	30	2 10	) N	) L	2 6	J M	24	) i	) k	210	) L	10		17	15	Л <sub>э</sub> ф	1.1	12	۱ د	. L		<b>.</b>	o ~	1	י מ	י ת	۰ ح	ا سا	2	1	Result No.
221.4	224.2	225.4	225.4	227.8	228.8	•	•	•	•	•	•	240.6	245	245	259.4	259.4	261.6	J٦	<b>J</b> ,	J١	267.4	7 6	200	ر د د	200	-	-	-	371	7.6	301 #	v	•	9 0	010	961	9 (	į,	1023 6	2259	3576	2708	2754	2868	Score
7.4	7.5	7.6	7.6	7.6	7.7		8.0	8.1	8.1	8.1	8.1	8.1	8 : 2 :	8.2	8.7	8.7		٥.	٥.	٥.	0	٠.	٥.	و د د	10.0	10.0	7.6.		10.0		12.0	15.0	,		J !		٠.	л с л с	л	75 B	86.4	90.9		96.2	Query Match I
35	4498	2209	1869	2681	2763	1749	2572	2946	2701	2222	2112	2112	4092	2650	3250	3170	1594	4917	202	בונה כרגה	3226	2462	2 P	<b>.</b> (	ມ -	1873	210105	030360	38000	л (л () ()	9205	2 C	77.12	134793	1076	2210	2025	1014	2128	8	5 7	72	3007	3109	gth
6	10	σ	œ	w	10	ω	10	9	9	σ	9	6	10	10	σ,	σ,	י יס	۰ م	ט פ	י ת	0	י ע	۰.	۰	ه د	0 1	U t	S (	י פ	J) (I	u (	<b>"</b> (	٥,	٥,	0 0	א כ	ית	۰۵	، م	ט.	۰	9	9	9	BB
AX262512	MMU11494	AY093170	ATSKIN2	AF181649	MMKEM	AF020310	RNMARK2	HSSTPKEMK	BC008771	51	v	AX375128	AF106937	AB020480	510	10	539	AB058763	AX305106	AX305105	AY057448	AX399987	AB049127	AB088047	AF020089	BC024291	AC125948	AC079583	AC008974	AV060288	AF316542	ABO14885	AKO74411	#C020922	ECACTOI	799	9 1	3 8	יע פיעכ	AX166526	AB058714	M8053	4798	AF479827	ID
AX262512 Sequence	U11494 Mus musculu	O Are	5/ A.	1649	0764 M	20310	-	H	71	31 Sequence			7 Rattus	0	104	5103	6390 Sequ	w	05106	5 Seque	48 H	7 Sequence	7 Homo	7 Homo	89 Homo	291 Homo sa	5948 Ratt	583 Mus n	4	288	6542	14885 Haloo	4411 Homo	20922 Homo	6701	27993	27995 Seque	45 Homo	6681	66526 Seque	58714 Homo	834275 Homo	AF479826 Homo sapi	827 Ho	Description

## ALIGNMENTS

ARESULT 1
AR479827
LOCUS
LOCUS
LOCUS
LOCUS
AR479827
AR479827
AR479827
ARCESSION
AR479827
AR479827
ARESION
AR479827
VERSION
AR479827
AREFERENCE
ORGANISM
EUKARYOCTA; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
REFERENCE
AUTHORS
AUTHORS
TITLE
Direct Submitted (02-FEB-2002) School of Life Sciences, Laboratory of

989 797 929 737 869

```
BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 99...
7880; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNT
                                                              558
                                                                                            690
                                   750
                                                                                                                         498
                                                                                                                                                       630
                                                                                                                                                                                    438
                                                                                                                                                                                                                   570
                                                                                                                                                                                                                                                                              510
                                                                                                                                                                                                                                                                                                          318
                                                                                                                                                                                                                                                                                                                                          450
                                                                                                                                                                                                                                                                                                                                                                                                    390
                                                                                                                                                                                                                                                                                                                                                                                                                                 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                              330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18 CGGACGCGTGGGCGGACGCGTGGGCGGGGGGGGGGGGCCGGGCCGGGACCA 77
                                                                                                                                                                                                                                                                      AGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGG
                                                                                                                                                                                                                           ACGTCTACGAGAAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGGCACCATGTCGTCCGGGGCCAAGGAGGGAGGTAGGGGGCTCTCCCGCCTACCACCTCC
                                           AGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGG
                                                                                    GCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAA
                                                                                                                                                                 TATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCCAAGGAGGCCCGAAAGTTCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                          AGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCACCCCACCCCACCCACCCACCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGA
                                                                                                                                                 TATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCC
                                                                                                                                                                                                            ACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGC
                                                                                                                                                                                                                                                                                                                                 AGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGG
                                                                                                                                                                                                                                                                                                                                                                                            AGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCACCCCACCCCACCCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Handan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /Product="potein kinase-like protein"
/product="potein kinase-like protein"
/product="potein id="aal87698.1"
/db_xref="G1:19401874"
/db_xref="G1:19401874"
/db_xref="G1:19401874"
/db_xref="G1:19401874"
/db_xref="MSGSREKEGGGSPAYHLPHPHPHPPOHAQYVGPYRLEKTIGKGQ
/translation="MSGSREKEGGGSPYAHLPHPHPHPPOHAQYVGPYRLEKTIGKGQ
/translation="MSGSREKEGGGSPYXHLVEREIAILKLIEHPHYLKLHDYYEN
KKYLYVLDHVGGELFDYLVKKGRYFREFKGTVSALDFCH8781CHADLKPE
NLLIDEKNNITAIADFGMASLOYGDSLLETSCGSPHYACEPVIKGEKYDGRRADMWSCG
VILFALLVGALFFDDDNLRQLLEKVKRGVFHMPHFIPDCQSLLRGMIEVEPERRLSL
EQIQKHPWYLGGKHEPDFCLEFAPGRRYAMRSLESNGELDPDVLESMASLGCFRDRER
LHRELFSEEENQEKMIYYLLDAKERYPSGEDDDLPPRNUVDPPRKRYDSPMLSRHGK
RRPERKSMEYLSITDAGGGGSPYRTRALEMAQHSQRSRSVSGASTGLSSSPLSSPRS
VWFSFSPEDGADEARGGGSPYRTRALEMAQHSQRSRSVSGASTGLSSSPLSSPRS
PWFSFSPEDGADEARGGGSPTSTQTFPPPSPGGGGVGAAMRSRLNSIRNSFLGSPRF
PRSCGGTPLHSFLHTPPRASPTGTFPPPSPGGGGVGAAMRSRLNSIRNSFLGSPRF
PRSCGGTPLHSFLHTPRASPTGTFPPPSPGGGVGAAMRSRLNSIRNSFLGSPRF
PRSCGGTPLHSFLISGPSRFRRAVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAP
PRSLQPPPGRPDPELSSSPRRGPKDKKKLATNGTPLP"

111 a 1033 c 957 g 508 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genes Research, Institute of Genetics, Fudan University, 220 n Road, Shanghai 200433, P. R. China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /chromosome="19"
278. .2614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Homo sapiens"
db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 2868; DB Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                       617
                         809
                                                                                      749
                                                                                                                   557
                                                                                                                                                 689
                                                                                                                                                                               497
                                                                                                                                                                                                            629
                                                                                                                                                                                                                                          437
                                                                                                                                                                                                                                                                                                                                                               317
                                                                                                                                                                                                                                                                         569
                                                                                                                                                                                                                                                                                                    377
                                                                                                                                                                                                                                                                                                                                                                                                                                                       389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             269
                                                                                                                                                                                                                                                                                                                                  509
                                                                                                                                                                                                                                                                                                                                                                                            449
                                                                                                                                                                                                                                                                                                                                                                                                                          257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
       Š
                                      밁
                                                                 γ
                                                                                                   밁
                                                                                                                           Ω
                                                                                                                                                            밁
                                                                                                                                                                                         Q
                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                      1830
                                                                                                   1770
                                                                                                                              1578
                                                                                                                                                           1710
                                                                                                                                                                                           1518
                                                                                                                                                                                                                         1650
1698 CCAGCCCGGCGGTGGCGTCGGGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCA
                                                                                                                                                                                                                                                      1458
                                                                                                                                                                                                                                                                                                                 1398
                                                                                                                                                                                                                                                                                                                                              1530
                                                                                                                                                                                                                                                                                                                                                                          1338
                                                                                                                                                                                                                                                                                                                                                                                                         1470
                                                                                                                                                                                                                                                                                                                                                                                                                                      1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1410
                                                                                                                                                                                                                                                                                    1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           618
                                                                                                                                                                                                               AGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGC
                              GCTCCACACCCCTGCCCGGCCCCCAGGCTCCCGCGCTCCTCTGGCGGGACCCCCTTGC
                                                                                                                                                    TGCCTTCTCGGGGGCCCCAGGGGTGGGGGGGCGCCGGGAGCAGCCCCCGGCCCCCAGTGCCC
                                                                                                                                                                                                                                                                                         CGGGTCTGTCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCGGAAGCGTGTGGATTCTCCCCATGCTGAGCCGTCACGGGAAGCGGCGGCGACAGAGCGGA 1277
                                                                                         CGGGTCTGTCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGG
                                                                                                                                                                                                                                                                                                                                      GACGGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCCGTAGCGTCAGTGGAGCCTCCA
                                                                                                                                                                                                                                                                                                                                                       GACGGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                 CCCGGAAGCGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAGCGGTATCCCAGCTGTGAGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGCCCCTGGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTGCGCAGTGAGGAGGAGCCAAGAAAGATGATATATTATCTGCTTTTGGATCGGA 1349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCTGCGCAGTGAGGAGGAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGA 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCCCCTGGCCGGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACCCCGTGCCTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGCCTCAGTCTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCCACTTCATTCCTCCAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATT
                                                           1697
                               1889
                                                                                           1829
                                                                                                                       1637
                                                                                                                                                                                                                                                                                                       1457
                                                                                                                                                                                                                                                                                                                                                                    1397
                                                                                                                                                      1769
                                                                                                                                                                                   1577
                                                                                                                                                                                                                 1709
                                                                                                                                                                                                                                              1517
                                                                                                                                                                                                                                                                            1649
                                                                                                                                                                                                                                                                                                                                      1589
                                                                                                                                                                                                                                                                                                                                                                                                  1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     857
```

Š 밁

밁 Š В Š

δÃ . 윰 δ Ъ δ 밁 δÃ ₽ Qy В δÃ 망 Ş

```
φ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                     Ş
                                                                                                                                                   B
                                                                                                                                                                          Ş
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                              밁
           õ
                                       당
                                                                 õ
                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1950
                                                                                                                                                                                                                                                                                                                     2610
                                                                                                                                                                                                                                                                                                                                                                          2550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1938
                                                                                                                                                    2790
                                                                                                                                                                                                                                                              2670
                                                                                                                                                                                                                                                                                                                                                                                                                                 2490
                                                                                                                                                                              2598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGA 1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACGGGACGGCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCACTCTCACTCTCGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGCCCCACCCCGAAGCCTGCAGCCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCT 2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACGGGACGCCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGG
AACTGTGAATCTGTAAATAAGGCCCAAGGAACATGTCGGGAGGGGGGGTGGACACAAAAAC 2537
                                                                                                                                                                                                                                                                                                                     CCTGACCCCACGGGGCCGGGGAGGGACGCGACCCCCCTTCCACCCCTTCCGTGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCCGGCCTGCTG 2297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCC
                                                        AGCAGATCCGGACAGGGCCCTCTGTCCCTGTGTCCCCCAACCCCCTCTTTCCCGGGCCC
                                                                                               ATTGATCAATCTCTCTGCGGGGTGGGGGTGGGGGAGGGACGGAGCTGGTTGGGGTGGCTT
                                                                                                          ATTGATCAATCTCTCTGCGGGGTGGGGTGGGGGAGGGACGGGAGCTGGTTGGGGTGGCTT
                                                                                                                                                   CGGCCTTGCCCTGCAGGGATGGGGCTCCACAGGCCGTGCCCAACTGGGGGTTGCTTAGG
                                                                                                                                                                                                                                     CGGCCTTGCCCTGCAGGGATGGGGCTCCACAGGCCGTGCCCAACTGGGGGTGGTTCTAGG
                                                                                                                                                                                                                                                              CCTGACCCCACGGGGCCGGGGAGGGAGGGGACCCCCCCTCCACCCCCCTTCCGTGCCCCCC 2477
                                                                                                                                                                                                                                                                                                                                                                          CTCCCCGCGAGGCCCCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                       CTCCCCGCCGAGGCCCCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGCCCCACCCCGAAGCCTGCAGCCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCT
                                         AGCAGATCCGGACAGGGCCCTCTGTCCCTGTGTCCCCCAACCCCCTCTTCCCGGGCCC
                                                                                                                                                                                                                     2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1817
                                                                                                                                                                                                                                                                                                                                                                            2609
                                                                                                                                                                                                                                                                                                                                                                                                    2417
                                                                                                                                                                                                                                                                                                                                                                                                                                  2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2009
                                                                                                                          2717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2429
                                                                                                2909
                                                                                                                                                      2849
                                                                                                                                                                                                          2789
                                                                                                                                                                                                                                     2597
                                                                                                                                                                                                                                                                                                                     2669
              2837
                                         2969
                                                                     2777
```

```
RESULT 2
AF479826
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                 ΩV
                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                         멅
                                                                                                                                                  밁
밁
                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         164
 374
                                     284
                                                                           314
                                                                                                              224
                                                                                                                                                  254
                                                                                                                                                                                                                           Local Sin
hes 2754;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAAAAAAAAAAAAAA 2917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG 343
                                                                                                                                                                      AAAAAAAAAAAAAAAAAA 3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC
                                                                                            CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC 283
CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (02-FEB-2002) School of Life Sciences, Laboratory of Human Genes Research, Institute of Genetics, Fudan University, Handan Road, Shanghai 200433, P. R. China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 3007)
She, X.Y., Guo, J.H. and Yu, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complete.cds.
AF479826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF479826.1 GI:19401870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens putative serine/threonine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF479826
                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                        636
                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                         /Codon_start=1
//Codon_start=1
//protain_id="anl87697.1"
//protain_id="anl87697.1"
//protain_id="anl87697.1"
//db_xref="cd::19401871"
//db_xref="cd::19401871"
//db_xref="cd::19401871"
//tanslation="MYAGITILGKGPEEPDGDDVSVPERKDEVAGGGGEEEBAEERGRHA
//translation="MYAGITILGKGPCTIGQKVAIKIVNREKLSESVLMKVEREIAILK
QYVGPYRLEKTIGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILK
LIEHPHVLKLEDVYENKKYLYLVLEHVSGGELEDYLVKKGRLTPKEARKEFRQIVSAL
DFCHSYSICHRDLXPENLLLDEKNNIRRIADFCMASLQVGDSLLETSCGSPHYACPEVI
KGEKVIGGRADMWSCGVILFALLVGALFDDDNLLRQLLEKVKRGVFHMPHFIPPDCQS
LLRGWIEZPEPKRLSLEQIQKHEPWYLGGKHEPDDNLLEEPARGRRYAMFSLFSNGELDPD
VLESMASIGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD
PPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSFPVFTRALEMAGHSQRSRSVS
GASTGLSSSPLSSPRSVFTSFSPEPGAGDEARGGGSFPSKTOTILPSRGPRGGAGEQP
PPPSARSTPLEGPBGSPRSSGGTPLHSPLHFPRASPTGTPGTTPPPSPGGGVGGAAWR
SRLNSIRNSFLGSPRRHRKKMQVPTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQI
FRITHENDIGSTENSTITUTATG TEDS: GUVIN GOVERNARGENGENDETSLDKEEQI
                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                        FLYLKDKPLSSIKADIVHAFLSIPSLSHSYLSQTSFRAEYKASGGPSVFQKPVRFQVD
ISSSEGPEPSPRRDGSGGGGIYSYTFTLISGPSRRFKRVYETIQAQLLSTHDQPSVQA
LADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKKLLATNGTPLP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /chromosome="19"
/map="19q13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                          940
                                                                                                                                                                                                                                           92.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .2512
                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    type="brain"
                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                           Score 2754;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                        906 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3007
                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                          525
                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein kinase mRNA,
                                                                                                                                                                                                                             0,:
                                                                                                                                                                                                                                                                 Length 3007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRI 12-MAR-2002
                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3029
   433
                                                                             373
                                                                                                                                                                                                                             0;
```

AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC	1364 1454	₽ Q
GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGCCTTGGAGATGGCCCAGC		g q
CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC 		р Q
CAGGACCTGCCTCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCAT 	<b></b>	B 8
GAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 	ь ь	g qq
GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAA 		g Q
4 CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTG	1004	B 5
4 GGCGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATG		g g
GAAGTGGAGCCCGAAAAAAG 	97	B 5
	91 9	B 5
GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACC	9 60 7	B 5
	79	문
	73	Q D
CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAA	64	δõ
4 AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCC	58	Å å
4 TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG 	61	B &
GACTGACGCCCAAGGAGGCCCG.	5 46	P Q
4 TACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGG 	4 40	p Q
TCATCGAACACCCACATGTC	4 4	D 4
は、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これで	ω A	Ó

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSM805307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2954
                                                                                                                 gene
                                                                                         CDS
                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGGGGGAGGGACGGAGCTGGTTGGGGTGGCTTAGCAGATCCGGACAGGGCCCTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTGTGTCGTCCCCAACCCCCTCTTCCCCGGGCCCCTCCTCCCCTGGTCCTCCCCCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTGTGTCGTCCCAACCCCCTCTTCCCGGGCCCCTCCTCCCCGGTCCTCCCCCCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATTTTATTTATTGATTAATTTATTTATTTATTTATTGATCAATCTCTCTGCGGGGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATTTATTATTGATTAATTTATTATTTATTTATTGATCAATCTCTCTGCGGGGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genome Project.
This clone (DRFZp547E1613) is available at the RZPD in Berlin Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 140: Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de Further information about the clone and the sequencing project is available.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4/20 bp mRNA linear PRI 12-JUL-20 Homo sapiens mRNA; cDNA DKFZp547E1613 (from clone DKFZp547E1613). AL834275
                                                                                                                                                                                                                                                                                                                                                 Submitted (09-JUL-2002) 1, D-85764 Neuherberg, GERMANY Clone from S. Wiemann, Molecular Genome Analysis, German Cancer Research Center (DKF2); Email s. wiemann@dkfz-heidelberg.de; sequenced by BMFZ (Biomedical Research Center at the Charite,
                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 2720) Koehrer, K., Beyer, A., Mewes, H.W., Weil, B. and Wiemann, S.
                                                                                                                                                                                                                                             at http://mips.gsf.de/proj/cDNA/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                    Berlin/Germany) within the cDNA sequencing
                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens
                                                                                                                                         /tissue_type="brain"
/clone_lib="547 (synonym:
DH10B; sites_NotI + SalI"
          /product="hypothetical protein"
/protein_id="CAD38950.1"
/db_xref="GI:21739847"
                                                                                                    /gene=
                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="19"
                                                  /codon_start=3
                                                              /note="putative serine/threonine
                                                                          /gene="DKFZp547E1613"
                                                                                                                                                                                /clone-"DKFZp547E1613"
translation="RLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKV/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:21739846
                                                                                                                           stage="fetal"
                                                                                                    DKFZp547E1613"
                                                               protein
                                                                                                                                                       Vector
                                                                                                                                                                                                                                                                                                                                         consortium of the
                                                                                                                                                                                                                                                                        project is available
                                                                                                                                                       pSport1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRI 12-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2683
                                                                                                                                                                                                                                                                                                   14059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                   B
                           Ş
                                                                           δ
δ
                                                                                                       밁
                                                                                                                              Š
                                                                                                                                                         밁
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                               밁
    멹
                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polyA_site
                                                                                                                                                                                                                                                                                                                                                                                           486
                                                                                                                                                                                                                                                                                                                                                                                                                                              426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        186
                                                                                                                                                                                                                                                                                      909
                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                         546
                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                     241
                            906
                                                                                                        601
                                                                                                                                                         541
                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                               421
                                                                                                                                786
                                                                                                                                                                                   726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              μ
```

EREIAILKLIEHPHYLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKF
FRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSP
HYACPEYIKGEKYDGRRADMWSCGVILFALLVGALPFDDDRILRQLLEKVKRGVEHMPH
FIPPDCQSLLRGMIEVPEKKLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRYAMRSLP
SNGELDDDVLESMASLGCFERDREKLHRELRSEEENQEKHIYLLLDRKERY PSCEDQD
LPPRNDVDPPKKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVETRRALEMAQH
SQRSRSVSGASTGLLSSSPLSSPRSPVFSFSBEDGAGDEARGGGSFTSKTQTLPSRGPR
GGGAGGQPPPSRKSTGLLSGSPTSKTGGTPLKSPLHTFRASPTGTPGTTPPSPGGG
GVGGAAWRSRLNSIRNSFLGSPRFHRKMQVPTAEEMSSLTPESSPELAKRSWFGNFI
SILDKEEQIFLYLKDKPLSSIKADIVHAFLSITSLSHSYLSGYTSFRAETXASGGFSVFG
KPVRFQVDISSSEGPEPSRRDGSGGGITSVTFTLISGPSRAFKRVVETIQAGLLST
HDQPSVQALADEKNAQTRPRSGAPPRSLQPPGRPDFELSSSPRRGPPGGCEAPGHQL
DPSALTPRGRGGRGPPSTPLPCPPTVNL"

551

/gene="DKFZp547E1613" 879 c 807 g

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 2719;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCGGCTGGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACT 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAAGCTCCACGACGTCTACGAGAACAAGAATATTTGTACCTGGTTCTGGAGCACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCGGCTGGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACT 60
ACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCC 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCT 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCCACATGTCC 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGG 305
                                                                                                                                                                                                                                                                           TGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACG
                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAG
                                                                                                                           TTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGC
                                                                                                                                                                     ACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCA
                                                                                                                                                                                                               ACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCA
                                                                                                                                                                                                                                                       TGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCTTTGATGACG
                                                                                                                                                                                                                                                                                                                                         CCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACA
                                                                                                                                                                                                                                                                                                                                                                                 CCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCC
                                                                                      TTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 2708;
; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                              965
                                                                                        720
                                                                                                                                905
                                                                                                                                                                                                                  845
                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                      785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
```

. 5

```
밁
                                                                                                                                                                                          Ş
                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                         ő
                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
      1801
                          1986
                                               1741
                                                                   1926
                                                                                        1681
                                                                                                            1866
                                                                                                                                  1621
                                                                                                                                                       1806
                                                                                                                                                                           1561
                                                                                                                                                                                                1746
                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                         1686
                                                                                                                                                                                                                                                              1441
                                                                                                                                                                                                                                                                                  1626
                                                                                                                                                                                                                                                                                                       1381
                                                                                                                                                                                                                                                                                                                           1566
                                                                                                                                                                                                                                                                                                                                                                     1506
                                                                                                                                                                                                                                                                                                                                                                                         1261
                                                                                                                                                                                                                                                                                                                                                                                                              1446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      966
TGAGTCACAGTGTGTGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCC
           TGAGTCACAGTGTGCCGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCC
                                                                                             CCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGG
                                          ACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCC
                                                     ACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCC
                                                                                   CCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGG
                                                                                                                            CTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAACGCT
                                                                                                                                        CTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAACGCT
                                                                                                                                                                     ACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGGCGAAGATGCAGGTCC
                                                                                                                                                                                                              GGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCCACCGGGGACCCCGGGGA
                                                                                                                                                                                                                                                                                                                                          AAACGCAGACGCTGCCTTCTCGGGGCCCCAGGGGTGGGGGGCGCCGGGGAGCAGCCCCCGC 1565
                                                                                                                                                                                                                                                                                                                                                                                  CCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGGCTCCCCCGACTTCCA 1505
                                                                                                                                                                                                                                                                                                                                                                                                                            GGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCACCGGGGACCCCGGGGA 1685
                                                                                                                                                                                                                                                                                                  CCCCCAGTGCCCGCTCCACACCCCTGCCCGGGCCCCCAGGCTCCCCGCGCTCCTCTGGCG
                                                                                                                                                                                                                                                                                                              CCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCCAGGCTCCCCGGGCTCCTCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCA 1385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAAGATGATATATTATCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGA 108:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATCCGAGCCTGCCATCCAACGGAG 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGACCTGCCTCCCCGGAATG
 1860
                     2045
                                           1800
                                                               1985
                                                                                    1740
                                                                                                         1925
                                                                                                                                                 1865
                                                                                                                              1680
                                                                                                                                                                       1620
                                                                                                                                                                                           1805
                                                                                                                                                                                                                                                         1500
                                                                                                                                                                                                                                                                                                  1440
                                                                                                                                                                                                                                                                                                                       1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1325
                                                                                                                                                                                                                                                                                                                                                                                                                             1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
```

```
DЬ
               Q
                                              Ş
  밁
                                 밁
                                                                 멁
                                                                              QΥ
                                                                                                 밁
                                                                                                               Q
                                                                                                                                               Š
                                                                                                                                                                                                밁
                                                                                                                                                                                                             δ.
                                                                                                                                                                                                                                              70
                                                                                                                                 뫄
                                                                                                                                                                밁
                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                 닭
                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρ
 2701
                                                                                                                                                 2645
                                                                                                                                                                 2401
                                                                                                                                                                                                 2341
                                                                                                                                                                                                                2525
                                                                                                                                                                                                                                                                2221
                                                                                                                                                                                                                                                                                2405
                                                                                                                                                                                                                                                                                                                2346
                                                                                                                                                                                                                                                                                                                               2101
                                                                                                                                                                                                                                                                                                                                               2286
                                                                                                                                                                                                                                                                                                                                                                                               1981
                                                                                                                                                                                                                                                                                                                                                                                                                               1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2046 CCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                2166
                                                                                                                                                                                                                                                                                                2161
                                                                                                                                                                                                                                                                                                                                                                                2226
                                                                                                                                                                                                                                                                                                                                                                                                                                               2106
GTTGGGGTGGCTTAGCAGATCCGGACAGGGCCCTCTGTCCCTGTGTCGTCCCCAACCCCC
                           CCGGAAGGAATTCTGGTTTCGCGTGATCCTGCCTGCGTCCCGTGTCTCTGATTCCGCCGGC
                                                             TCTTCCCGGGCCCCTCCTCCCCTGGTCCTCCCCCCACGACCTTCTGTACGGATTTGCTCT
                                                                      TCTTCCCGGGCCCCTCCTCCCCGGTCCTCCCCCACGACCTTCTGTACGGATTTGCTCT
                                                                                                                             AGCTGAGCAGCTCTCCCCGCCGAGG-CCCCCCCAAGGAAGCAAGAAGCTCCTGGCCACCAAC
                                                                                                                                                                                                                            TTCCGTGCCCCCAACTGTGAATCTGTAAATAAGGCCCCAAGGAACATGTCGGGAGGGGGG
                                                                                                                                                                                                                                      TTCCGTGCCCCCAACTGTGAATCTGTAAATAAGGCCCAAGGAACATGTCGGGAGGGGGG
                                                                                                                                                                                                                                                           GGGACCCCTCTGCCCTGACCCCACGGGGGCCCGGGGAGGGGACCCCCCCTCCACCCCCC
                                                                                                                                                                                                                                                                                                                           TGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                    TGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAAGAACGGGGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                           TCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                    TCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                            2884
                                                              2640
                              2700
                                                                             2824
                                                                                             2580
                                                                                                             2764
                                                                                                                                            2704
                                                                                                                             2520
                                                                                                                                                                                            2400
                                                                                                                                                            2460
                                                                                                                                                                             2644
                                                                                                                                                                                                            2584
                                                                                                                                                                                                                            2340
                                                                                                                                                                                                                                            2524
                                                                                                                                                                                                                                                           2280
                                                                                                                                                                                                                                                                            2464
                                                                                                                                                                                                                                                                                            2220
                                                                                                                                                                                                                                                                                                            2404
                                                                                                                                                                                                                                                                                                                            2160
                                                                                                                                                                                                                                                                                                                                            2345
                                                                                                                                                                                                                                                                                                                                                            2100
                                                                                                                                                                                                                                                                                                                                                                            2285
                                                                                                                                                                                                                                                                                                                                                                                            2040
                                                                                                                                                                                                                                                                                                                                                                                                            2225
                                                                                                                                                                                                                                                                                                                                                                                                                            1980
                                                                                                                                                                                                                                                                                                                                                                                                                                           2165
```

VERSION KEYWORDS SOURCE LOCUS
DEFINITION
ACCESSION RESULT 4 AB058714

REFERENCE

밁 δÃ Ъ Ş 밁 Š Вþ Ş

ORGANISM HOMO Sapiens mRNA for KIAA1811 protein, partial cds AB058714 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (sites) Homo sapiens Homo sapiens brain cDNA to AB058714.1 GI:14017838 mRNA, clone:ha06731.

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                           Ş
                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 2576; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                  574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   334
301
                                                                                                                                 241
                                                                                                                                                                                                   514
                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                    454
                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                274 GATCGTGAACCGGGAGAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGC 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAA 393
                               TTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGG 633
                                                                                                                                                                                                                                                                                                 AAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGC 513
                                                                                                                                                                                                                                                                                                                                                                                                   GAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGT 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGC 60
TTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGG
                                                                                                                                    GCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCT
                                                                                                                                                                GCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAAACCTGCT 573
                                                                                                                                                                                                                                                                     AAAGAAGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTTCCGCCAGATTGTGTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATCCTGAAGCTCATCGAACACCCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nagase,T., Nakayama,M., Nakajima,D., Kikuno,R. and Ohara,O. Prediction of the coding sequences of unidentified human genes. xx. The complete sequences of 100 new cDNA clones from brain which code for large proteins in vitro DNA res. 8 (2), 85-95 (2001) 21245130 2 (bases 1 to 2576)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ohara, O., Nagase, T. and Kikuno, R.

Direct Submission
Submitted (27 MAR-2001) Osamu Ohara, Kazusa DNA Rsearch Institute,
Department of Human Gene Research; 1532-3, Yana, Kisarazu, Chiba
292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp,
URL:http://www.kazusa.or.jp/huge, Tel:81-438-52-3913,
Fax:81-438-52-3914)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=2
/product="KIAA1811 protein"
/product="KIAA1811 protein"
/product="KIAA1811 protein"
/protein_id="Bab47440.1"
/protein_id="Bab47440.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QVPTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFL
SIPSLSHSYLSQTSFRAEYKASGGFSYFQKFVREPQVDISSSEGPEPSPRROGSGGGI
YSVTFTLISGPSRFEKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQ
PPPGRPDPELSSSPRREPPKDKKLLATMGTPLP*
842 c 766 g 460 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="ha06731"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="KIAA1811"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="brain"
/note="vector:pBluescriptII SK plus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Start codon is not identified."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "KIAA1811"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 2576;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                         240
                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

1713 1440	1654 GCCCCGGGCCAGTCCCACCGGGGACCCCGGGGGACAACACCACCCCCAGCCCCAGCCCGGCGG	Оу
1653 1380	1594 CGGCCCCCAGGCTCCCGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACAC	Оу
1593 1320	GCAGCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	Db Qy
1533 1260	1474 TGAGGCTCGAGGCGGGGGCTCCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCC	Фр
1473 1200	TCCTTTT       TCCTTTT	pb Qy
	CCCGTAGCGTCAGTGGAG                  CCCGTAGCGTCAGTGGAG	ду У
1353 1080	GTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGAT 	ОУ
1293 1020	34 TTCTCCCATGCTGAGCCGT	Db .
1233 960	GGAATGATGTTGACCCCCCCGGAAGCGTGTGGA 	Ωy
1173 900	ATATATTATCTGOTTTTGGATCGGAAGGAGCGGTATCCCAG 	Qу Дъ
1113 840	AGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGA	Qу Db
1053 780	ACGGAGA         ACGGAGA	Qy
993 720	34 TTGGTACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCC	Qу
933	74 GGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCC	Qy Db
873 600	ACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAG 	ОУ
813 540	754 CCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGT (	Оу
753 480	ATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGC 	Qу
693 420	CCAGCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAA 	ρ 2

Ş 밁

밁 Š 밁 Š

2521

```
2461
                                                               2734
                                                                                            2401
                                                                                                                         2674
                                                                                                                                                   2341
                                                                                                                                                                                2614
       2794
                                                                                                                                                                                                               2281
                                                                                                                                                                                                                                                                        2221
                                                                                                                                                                                                                                           2554
                                                                                                                                                                                                                                                                                                                                                             2434
                                                                                                                                                                                                                                                                                                                                                                                          2101
                                                                                                                                                                                                                                                                                                                                                                                                                      2374
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1741
                                                                                                                                                                                                                                                                                                                                 2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1441
GCCCTCTGTGCCCTGTGTCCCCCAACCCCCTCTTCCCGGGCCCCTCCTCCCCTGGTCCT
                                                                                                   GCGGGGTGGGGTGGGGAGGGACGGGAGCTGGTTGGGGTGGCTTAGCAGATCCGGACAGG
                                                                                                                                                                                                                                                                                                                                                                                  CCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCTCTGCCCTGACCCCACGGGGC
                                           GCCCTCTGTCCCCTGTGTCGTCCCCAACCCCCTCTTCCCGGGCCCCTCCTCCCCCTGGTCCT
                                                                                    GCGGGGTGGGGTGGGAGGGACGGGAGCTGGTTGGGGTTGGCTTAGCAGATCCGGACAGG
                                                                                                                                                                                                                          ATAAGGCCCAAGGAACATGTCGGGAGGGGGGTGGACACAAAAACCGGCCTTGCCCTGCAG
                                                                                                                                                                                                                                                                                                                                          CGGGGAGGGAGGGGACCCCCCTCCACCCCCTTCCGTGCCCCCAACTGTGAATGTGTAA
                                                                                                                                                                                                         ATAAGGCCCAAGGAACATGTCGGGAGGGGGGGGTGGACACAAAAACCGGCCTTGCCCTGCAG
                                                                                                                                                                                                                                                                                                                           CGGGGAGGGAGGGGACCCCCCTCCACCCCCTTCCGTGCCCCCCAACTGTGAATCTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGCAGCCCCACCCGGCCCCAGACCCAGAGCTGAGCAGCTCTCCCCGGCCGAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCGGGCCTGCTGGTGCCCCACCCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGTGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAA 2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCCCTGGCAGACGAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCAGGGCCGAGTACAAGGCCAGTGGGCGGCCCCTCCGTCTTCCAAAAGCCCGGTCCGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAAGAACAACTATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGGAGA 1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGA 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCTCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGAC 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTCGGGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGA 1620
                                                                                                                   2733
                                                                                                                                                                                                         2340
                                                                                                                                                                                                                                     2613
                                                                                                                                                                                                                                                                  2280
                                                                                                                                                                                                                                                                                              2553
                                                                                                                                                                                                                                                                                                                           2220
                                                                                                                                                                                                                                                                                                                                                                                                               2433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1680
                                                                                                                                                                                                                                                                                                                                                                                    2160
                                                                                                                                                                                                                                                                                                                                                                                                                                             2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2133
                                                                                                                                                                                                                                                                                                                                                        2493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

ρy 밁

밁 δÃ В ρ 밁 Qy 밁 δÃ

δÃ 밁

밁 Ş Вþ δÃ В δ 밁 Ş

Ş 밁 Qy da γQ 밁 Ş 밁 Š 밁 Š

```
RESULT 5
AX166526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
     Š
                         밁
                                          Ş
                                                                밁
                                                                                   ΩV
                                                                                                        문
                                                                                                                            Š
                                                                                                                                                밁
                                                                                                                                                                    ğ
                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                 В
                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 2259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
764 GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                 607
                                                                                     644
                                                                                                         547
                                                                                                                              584
                                                                                                                                                  487
                                                                                                                                                                     524
                                                                                                                                                                                          427
                                                                                                                                                                                                             464
                                                                                                                                                                                                                                  367
                                                                                                                                                                                                                                                      404
                                                                                                                                                                                                                                                                          307
                                                                                                                                                                                                                                                                                              344
                                                                                                                                                                                                                                                                                                                  247
                                                                                                                                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                                                                                                                                        164 CACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGGGG
                                                                                                                                                                                                                                                                                                                                     284
                                                                                                                                                                                                                                                                                                                                                                             224
                    TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                            TGCCACAGCTACTCCATCTGCCACAGAGACCCTAAAGCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                     CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAATATTTG
                                                            CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGGGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                   AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTC
                                                                                                              AAAAACAACCATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTC
                                                                                                                                                                                                  TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                                                                                      AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTC
                                                                                                                                                                                                                             TACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                           Sequence
AX166526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Flanagan, P. and Clary, D.S.
Novel human protein kinases and protein
Patent: WO 0138503-A 17 31-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 2385)
Plowman,G.D., Whyte,D., Manning,G.S., Sudarsanam,S.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sugen, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AX166526.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AX166526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          494 a
                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. .2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
768 c 731 g 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (SD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:14546871
                                                                                                                                                                                                                                                                                                                                                                                                                                                75.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Whyte, D., Manning, G.S., Sudarganam, S.S., Martinez, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent
                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 2259;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2385 bp
: WO0138503.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         392
                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            kinase-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
  823
                                       763
                                                                                                                                                                                                                                                                                                                                343
                                                             999
                                                                                703
                                                                                                     606
                                                                                                                         643
                                                                                                                                              546
                                                                                                                                                                 583
                                                                                                                                                                                     486
                                                                                                                                                                                                        523
                                                                                                                                                                                                                              426
                                                                                                                                                                                                                                                463
                                                                                                                                                                                                                                                                                         403
                                                                                                                                                                                                                                                                                                                                                     246
                                                                                                                                                                                                                                                                      366
                                                                                                                                                                                                                                                                                                              306
                                                                                                                                                                                                                                                                                                                                                                         283
                                                                                                                                                                                                                                                                                                                                                                                                                223
                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

O B	727 824		
₽ 5	00 1	ACATECCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC 84	
Qγ	884	AAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT	
Ф	847	GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA 906	
Оy	944 907	GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCTGGCCGCCGGGTAGCCATG 100	, ω
Qy	1004	GGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCAC	w
Вb	967	CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGGACGTCCTAGAGAGCATGGCATCACTG 102	δ
ν	1064	GGCTGCTTCAGGGACCGCGAGAGGGGGGGGTGCGTGCGCGAGTGAGGAGGAGAGCCAA 112	ω̈
В	1027	GCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGAGGAGGAGGAGAAACC	9
3 2	1124	GAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 118	n ω
Ş	1184	ассаротосотососсаватсятсятся ососососска высостствоватте тесерате 12	J.
Db '	1147		9
Qy .	1244	TGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGT	ũ
용	1207	CACGGGAAGCGGCGACCAGAGCGGGAAGTCCATGGAAGTCCTGAGCATCAC	6
VΩ	1304	GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCAC 136	ŭ
B	1267	ATGCCGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCA	6
Qy	1364	CCAGAGATCCCGTAGCGTCAGTGGA	ũ
당	1327	GCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAG	ð
δ	1424	AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCCGGGGGCTGGAGATGAGGCTCGA 148	$\tilde{\omega}$
밁	1387	GCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCG	9
Qy	1484	GGGGGCTCCCCGACTTCCAAAAC	ü
Db	1447	GCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCCAGGGGTGG	9
Qy	1544		$\ddot{\omega}$
В	1507	GCGCCGGGGAGCAGCCCCCGCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCC	6
Ωy	1604	CTCCCCGCGCTCTGGCGGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCG	ယ်
В	1567	GCTCCCGGGGTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGC	8
Qy	1664	CGGGACCCCGGGGACAACACCACCCCCAGCCCCGGCGGTGGCGTCG	Ω
Db	1627	GTCCCACCGGGACCCGGGGACAACACCACCCCCAGCCCCGGCGG	6
Qy	1724	CCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCT	$\ddot{\omega}$
DЬ	1687	GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTT 174	9
Qy	1784	CGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG	$\ddot{\omega}$
皮	1747	ACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC 18	90
Qy	1844	TCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAA 19	03

```
Ş
                                                                                                                                                                                                                                                                           γ
                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
 밁
                           Ω
                                                           밁
                                                                                       δÃ
                                                                                                                       밁
                                                                                                                                                    δð
                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                        2047
                                                                                                                                                                                                                                                                                                                                        2084
                                                                                                                                                                                                                                                                                                                                                                         1987
                                                                                                                                                                                                                                                                                                                                                                                                                                    1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1807
2347
                                                             2287
                                                                                                                        2227
                                                                                                                                                                                                                 2204
                                                                                                                                                                                                                                                2107
                                                                                                                                                                                                                                                                                                                                                                                                      2024
                              2384
                                                                                          2324
                                                                                                                                                     2264
                                                                                                                                                                                    2167
                                                                                                                                                                                                                                                                              2144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1904 CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT 1963
AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTGA 2422
                                                                                                                                                                                                    GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                             ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                         GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                       GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT
                                                          CCACCCGGCCGAGACCCAGAGCTGAGCAGCTCTCCCCGCGAGGCCCCCCCAAGGAC
                                                                                                                                                     GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                                                                    GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                             ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAA
                                                                                                                        GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1866
                                                             2346
                                                                                          2383
                                                                                                                        2286
                                                                                                                                                                                                                 2263
                                                                                                                                                                                                                                                2166
                                                                                                                                                                                                                                                                              2203
                                                                                                                                                                                                                                                                                                             2106
                                                                                                                                                                                                                                                                                                                                          2143
                                                                                                                                                                                                                                                                                                                                                                         2046
                                                                                                                                                                                                                                                                                                                                                                                                                                    1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1926
                                                                                                                                                       2323
                                                                                                                                                                                                                                                                                                                                                                                                       2083
```

RESULT 6 BC016681 LOCUS DEFINITION ACCESSION

WERSION KEYWORDS SOURCE ORGANISM BC016681

REFERENCE AUTHORS HITLE JOURNAL

*',* 

COMMENT REMARK

Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lou Staudt
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Baylor College of Medicine Human Genome Web site: http://www.hgsc.bcm.tmc.edu/cdna/ Contact: villalon@bcm.tmc.edu. Villalon, D.K., Luna, R.A., Hale, S.M., Hulyk A.M., Holloway, M., Telford, B, Hodgson, A., Muzny,D.M., Gibbs,R.A. DNA Sequencing by: Sequencing Center NIH-MGC Project URL: http://mgc.nci.nih.gov Contact: MGC help desk Submitted (31-OCT-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590, Strausberg, R. Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; Homo sapiens, BC016681 Center code: BCM-HGSC Direct Submission Homo sapiens BC016681.1 (bases 1 to 2128) GI:16741775 2128 bp mRNA linear clone MGC:21870 IMAGE:4341838, mRNA, Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo. S.M., Hulyk, s , PRI 05-NOV-2001 complete cds. Lu, X., Garcia, J., Yu, W.,

Clone distribution: MGC clone distribution information can be found

Bouck,

```
Ş
                                                              밁
                                                                                                 Ş
                                                                                                                                      뫄
                                                                                                                                                                   δÕ
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity Matches 1956; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                        1423 CAGCCCAAGGAGTCCGGTCTTTTCCCTTTTCACCGGAGCCGGGGCTGGAGATGAGGCTCG
                                                                                                                                                                           1363
                                                                                                                                                                                                                                                     1303
                                                                                                                                                                                                                                                                                                                       1243 GCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC 1302
                                                                                                                                                                                                                                                                                                                                                                              1183 CCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGGATTCTCCCAT 1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1003 GCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCCGACGTCCTAGAGAGCATGGCATCACT 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                529
                                                                                                                                                                                                                                                                                          469
                                                                                                                                                                                                                                                                                                                                                                409
                                                                                                                                                                                                                                                                                                                                                                                                                                      349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                169
AGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCAGGGGTGG
                                                                                                                                                  CGATGCCGGGGTGGTGGCTCCCCTGTACCCACCCGACGGCCTTGGAGATGGCCCAGCA 1362
                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGA 1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGAGAACCA 1122
                                                                                                                                  CAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAG
                                                                                                                                                                                                          CGATGCCGGGGGTGGTGGCTCCCCTGTACCCACACGACGGCCCTTGGAGATGGCCCAGCA
                                                                                                                                                                                                                                                                                    GCTGAGTCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC
                                                                                                                                                                                                                                                                                                                                                            CCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACT 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          through the I.M.A.G.E. Consortium/ILNL at: http://image.llnl.gov
Series: IRAK Plate: 26 Row: j Column: 5
This clone was selected for full length sequencing because it
passed the following selection criteria: Hexamer frequency ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISG
PSRRFRKVVETIQAQLLSTHOOPSVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPEL
SSSPRRAPPKDKKLLATNGTPLP
1 707 c 651 g 362 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="Unknown (protein for MGC:21870)"
/product="Unknown (protein for MGC:21870)"
/protein_id="AAH16681.1"
/db_xref="GI:16741776"
/translation="MMSLPSNGELDPDVLESNASIGCFRDRERLHRELRSBEENQEKM
/translation="MMSLPSNGELDPDVLESNASIGCFRDRERSPVFSEREPGAGDEA
IYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITD
AGGGGSFVFTRALEMAQHSQRSRSYGSASTGLSSSPLSSPRSVFSEPBFAGDEA
RGGGSFVFXTQTLPSRGEPRGGGAGEQPPPSARSTFLLGSPFBFRSKGGTPLHSPLHT
PRASPTGTPGTTPPPSPGGGVGGAAGRSRLNSIRNSFLGSPFBHRRKMQVFTAEEMSS
LTPESSPELAKASWFGNFISLDKEEQIFLVLKDKPLSSIKADIYHAFLSIPSLSHSYL
LTPESSPELAKASWFGNFISLDKEEQIFLVLKDKPLSSIKADIYHAFLSIPSLSHSYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606"
/clone="MGC:21870 IMAGE:4341838"
/tissue_type="Lymph, lymphoma"
/clone_lib="NIH_MGC_85"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pCMV-SPORT6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1953.6;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            651 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              362 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                     1542
                                                                                               1482
                                                                                                                                                                                                            588
                                                                                                                                                                                                                                                                                    528
                                                                                                                                                                                                                                                                                                                                                            468
                                                          708
                                                                                                                                  648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . _
```

Дb	709	AGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGGGTGG 768	
Qγ	1543	GCCGGGGAGCAGCCCCCGCCCGGTGCCCGCTCCACACCCCTGC	
망	769	GGCGCC	
Qy	1603	TCCCCGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGG	
Дb	829	GCCTCTGCACACGCCCCGGGC	
Qy	1663	TCCCACCGGGACCCCGGGGACAACACCACCCCCCAGCCC	
Db	889	AGTCCCACCGGGACCCCGGGGACAACACCACCCCC	
Qy		AGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCCTT 1782	
Ъ	949	GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCT	
Qy	1783	CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAG	
Дb	1009	TCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTC 1068	
γQ	843	AAA	
ф	069	CAAAACGCTCC	
, 15	1903	9	
	) (		
문 5			
Qy	2023	GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGA	
皮	1249	CGAGTACAAAGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGA 1308	
Qγ	2083	CCGCGACGGGACGGCAGCGGAGGTGGTG	
DЬ	1309	ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCG	
Qy	14	- 44	
В	1369	ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTG	
Qy	2203	ACCAGCCCTCCGTGCAGGCCCTGG	
贯	1429	GAGACCATCCAGGCACAGCTCCTC	
Qy	2263	CCTGCTGGTGCCCCACCCCGAAGCCTGCAGC	
DЪ	1489	GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAG	
VQ.	2323	AGCAGCTCTCCCCGCCGAGGCCCCCCCAAGGA 23	
		TO THE PROPERTY OF THE PROPERT	
₽ . <del>?</del>	1609	CAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTGGACCCCACGGGGCCGGGGAGGG 2442 	
ν.	443	GGGACCCCCTCCACCCCCTTCCGTGCCCCCAACTGTGAATCTGTAAATAAGGCCC 250	
Вb	1669	AGGGGACCCCCTCCACCCCCTTCCGTGCCCCCAACTGTGAATCTGTAAATAAGGCCC 1728	
Qy	503	GGAACATGTCGGGAGGGGGGGTGGACACAAAAACCGGCCTTGCCCTGCAGGGATGGGG	
Ъ	729	AAGGAACATGTCGGGAGGGGGGTGGACACAAAAACCGGCCTTGCCCTGCAGGGATGGGGC 1788	
QΥ	2563	CAGGCCGTGCCCAACTGGGGGTGGTTCTAGGGGAACAGGGGGGCGGGGGAGCTGTT	
Вb	1789	CCACAGGCCGTGCCCAACTGGGGGTTGGTTCTAGGGGGAACAGGGGGGGG	

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 7
HSM803233
                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2623
                                                                                                                                                                                gene
                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                  source
          polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCTGTGTCGTCCCCAACCCCCTCTTCCCGGGCCCCCTCCTCCCCGGTCCTCCCCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGGGGGAGGGAGCTGGTTGGGGTGGCTTAGCAGATCCGGACAGGGCCCTCTGT 1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGGGGAGGGAGCGGGTTGGGGTTAGCAGATCCGGACAGGGCCCTCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059
Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de Further
information about the clone and the sequencing project is available
at http://mlps.gsf.de/proj/cDNA/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (09-JUL-2002) 1, D-85764 Neuherberg, GERMANY Clone from S. Wiemann, Molecular Genome Analysis, German Cancer Research Center (DKFZ); Email s.wiemann@dkfz-heidelberg.de; sequenced by GBF (National Research Centre for Biotechnology Ltd., Braunschweig/Germany) within the cDNA sequencing consortium of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1014)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL831945
AL831945.1
                                                                                                                                                                                                                                                                                                                                                                                             German Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wiemann,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bloecker, H., Boecher, M., Brandt, P., Mewes, H.W., Weil, B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens mRNA; cDNA
                                                                                                                                                                                                                                                                                                                                                                               This clone (DKF2p547F069) is available at the RZPD in Berlin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSM803233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submission
                                                                                                                                                                                         /tissue_type="brain"
/clone_lib="547 (synonym:
DH10B; sites NotI + SalI"
/dev_stage="fetal"
                                   /codon_start=2
/product="hypothetical protein"
/protein_ia="CAD38595.1"
/protein_ia="CAD38595.1"
/db_xref="GI:21732472"
/translation="ISLDKEEDFIFULKDKPLSSIKADIVHAFLSIPSLSHSVLSQTS
FRAEXKASGGGSVFCKFVRFCYDISSSEGFEPSPRRDGSGGGGIYSVFFTLISGPSRR
FRAEXKASGGGSVFCKFVRFCYDISSSEGFEPSPRRDGSFGGGIYSVFFTLISGPSRR
FRAEXKASGGGSVFCKFVRFCYDISSSEGFEPSPRRDGSFGGGTYSVFFTLISGPSRR
FRAEXKASGGSVFCKFAFT
                                                                                                                                                       /gene="DKFZp547F069"
<1. .541
                         RRGPPKDKKLLATNGTPLP"
                                                                                                                                                                                                                                                            /db_xref="taxon:9606"
/chromosome="19"
                                                                                                                                         /gene="DKFZp547F069"
                                                                                                                                                                                                                                             /clone="DKFZp547F069"
                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/gene="DKFZp547F069"
                                                                                                                             note="similarity to PEN11B (Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:21732471
                                                                                                                                                                                                                                                                                                    .1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DKFZp547F069 (from clone DKFZp547F069).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                       hfbr1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                         Vector
                                                                                                                            sapiens)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRI 12-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뎦
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δã
                                                                                                                 ΩV
                                                                                                                                            В
                                                                                                                                                                   δÃ
                                                                                                                                                                                             Б
                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                            밁
            δÃ
                                        밁
                                                                S
                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1942
                                                                                                                                                                                                                                                                                                                                                                                                                                      2362
                                                                                                                                                                                                                                                                                                                                                                                  2422
               2842
                                                                                                                    2722
                                                                                                                                                                                                                         2602
                                                                                                                                                                                                                                                                           2542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2302
                                                                                                                                                                      2662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Sin
                                                                                           841
                                                                                                                                              781
                                                                                                                                                                                               721
                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ш
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAG 1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAA 2061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGACGGCAGCGGAGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCT 2001
                                                                                                                                                                                                                                                                                                    GCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCCGGCCTGCTGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTTCCAGAGCCCTCCCCGCGACG 2121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCCTCCGTCTTCCAAAA
                                                                                                           GATCCGGACAGGGCCCTCTGTCCCTGTGTCGTCCCCAACCCCCTCTTCCCGGGCCCCTCC
                                                                                                                                                                                                                   CCGCCGAGGCCCCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGCCGAGGCCCCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCACCCGAAGCCTGCAGCCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCACCCGAAGCCTGCAGCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGC
TTCGCGTGA 2850
                               GATCCGGACAGGGCCCTCTGTCCCTGTGTCGTCCCCAACCCCCTCTTCCCGGGCCCCTCC
                                                                                                                                                      ATCAATCTCTCTGCGGGGTGGGGTGGGGGAGGGAACCTGGTTGGGGTGGCTTAGCA
                                                                                                                                                                        ATCAATCTCTCTGCGGGTGGGGTGGGGTGGGGAGGGACGGGAGCTGGTTGGGGTTGGCTTAGCA
                                                                                                                                                                                                                                                                                                                                                                         ACCCCACGGGGCCGGGGAGGGACCCCCCCCCCCCCCTTCCGTGCCCCCAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       נם
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 969; DB 9; L
Pred. No. 1.4e-172;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                960
                                                                                                                                                         840
                                                                                                                                                                                       2721
                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                     2661
                                                                                                                                                                                                                                                                                                                2601
                                                                                                                                                                                                                                                                                                                                                                            2541
                                                                                                                                                                                                                                                                                                                                                                                                                                            2481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                               660
                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
```

В

Pocas

878

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 8
AX327995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 1477; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
    629
                                   759
                                                                                                                                                            639
                                                                                                                                                                                           449
                                                                                                                                                                                                                            579
                                                                                                                                                                                                                                                       389
                                                                                                                                                                                                                                                                                                                                                 459
                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                269
                                                                                                                                                                                                                                                                                                                                                                                                                                                        339 TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAAACAAGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC 818
                                                                                                                                          GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG
                                                                                                                                                                                                       ATGAGAAAAACAACCATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA
                                                                                                                                                                                                                                                 TGGTGGGGGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGC
                                                            AGAAGTATGACGGCCGGAAGGCGGACGTGTGGGAGCTGCGGCGTCATCCTGTTCGCCTTGC
                                                                               AAAAATATGATGGCCGCCGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC
                                                                                                                       GCCTGTTGGAGACCAGCTGTGGGTCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGG
                                                                                                                                                                                     AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                            ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                           ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGAAGACGCTGGGCAAAGGACAGA 218
                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAACAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCAGCACGCGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGGCAGA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCGCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2246, protein kinase molecules and uses therefor Patent: WO 0181588-A 3 01-NOV-2001; Millennium Pharmaceuticals, Inc. (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2025 bp
Sequence 3 from Patent W00181588
AX327995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Meyers,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AX327995.1 GI:18098148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AX327995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
641 c 616 g 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32.2%;
70.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 961; DB 6; Length 2025; Pred. No. 4.7e-171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 435;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       326 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAT 07-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
 889
                                                            628
                                                                                           758
                                                                                                                          568
                                                                                                                                                       698
                                                                                                                                                                                        508
                                                                                                                                                                                                                    638
                                                                                                                                                                                                                                                   448
                                                                                                                                                                                                                                                                                  578
                                                                                                                                                                                                                                                                                                                                              518
                                                                                                                                                                                                                                                                                                                                                                             328
                                                                                                                                                                                                                                                                                                                                                                                                          458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       398
                                                                                                                                                                                                                                                                                                               388
                                                                                                                                                                                                                                                                                                                                                                                                                                        268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . _
                                                                                                                                                                                                                                                                                          Q.
              닭
                                        δÃ
                                                                                                   δÃ
                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                         밁
                                                                                                                                       밁
                                                                                                                                                                    Š
                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q<sub>V</sub>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
              1532
                                          1839
                                                                                                                                     1412
                                                                       1472
                                                                                                                                                                                                   1358
                                                                                                                                                                                                                                                                1327
                                                                                                                                                                                                                                                                                               1599
                                                                                                                                                                                                                                                                                                                                                           1539
                                                                                                                                                                                                                                  1659
                                                                                                                                                                                                                                                                                                                                                                                                                      1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1274 TCAGCAGCCCCG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1419 TAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGG 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             819 GGGGGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA
                        AGTCCTCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAG
                                                                                        GCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG
                                                                                                                                                 GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                               CTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCAGGG 1538
      AGTCGTCCCCAGAGCTGGCGAAGAAGTCCTGGTTTGGGAACTTCATCAGCCTGGAGAAGG
                                                                    GAGGGGTGCCCTGGAGGGCGCGCCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCC
                                                                                                                                                                                              AGGAGAGCCCGGCTGGCACGCCCAACCCCCACGCCCCGTCCAGCCCC-----AGCGTCG
                                                                                                                                                                                                                          -----ACCCCCAAGGGGACACCTGTCCACACGCCAA 1357
                                                                                                                                                                                                                                                                                     CCCCAGGCTCCCGCGCTCCTCTGGGGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1658
                                                                                                                                                                                                                                                                                                                                                   GTGGGGGCGCCGGGAGCAGCCCCCCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCC 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAC-----GGACGCGGCTCCCCGGTGCCTCCGCGGGCGGCCATTGAGATGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGATGCTGAACCGGCACGGCAAGCGGCGGCCAGAACGCAAATCCATGGAGGTGCTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCACCGATGCCGGGGTGGTGGCTCCCCTGTACCCCACCCGACGGGCCTTGGAGATGGCCC 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCAAGAAAAGATGATATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATCCGCTCGCTGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGGCGTGTTCCACATGCCGCACTTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGATGAGGACCTGCCCCCCGGAACGAGATAGACCCTCCCCGGAAGCGTGTGGACTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATATAGGGGGCAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGCGAGGTGGACGCCGCCGCCTCACGCTAGAGCACATTCAGAAACACATATGGT 808
```

밁 Š

δ 밁 Q

ORIGIN

밁 Qy 밁 δõ 밁 õ 밁 δ B Ş В Ş 吊 δÃ ₽ Q 밁

1898

1838

1531

1778

1411

1326

1286

1286

1273 1418 1213 1238 1042

1102

1162

982

862

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
AX327993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                            ORIGIN
                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pocas
        Query Match
Best Local Sin
Matches 1477;
                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1959
                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCACGCCTTCCTGTCGATTCCCCAGTCTCAGCCACAGCGTCATCTCCCCAAACGAGCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCAGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGGCATCTACTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGATATCACCTACACGGAGGGT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCAGA 1940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGCAGA 2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGCAGATCTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2219 bp
Sequence 1 from Patent WO0181588.
AX327993
AX327993.1 GI:18098146
                                                                                                                                                                                                                                                                                                                                                           2246, protein kinase molecules and uses therefor Patent: WO 0181588-A 1 01-NOV-2001; Millennium Pharmaceuticals, Inc. (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryota; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human
                                                                                                                                                                                                                                                                                                                                                                                                    Meyers,R.
                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                     Similarity
                                                                         476
         Conservative
                                                                    /translation="Mystekogaqhaqyygpyrlektigkgqtglyklgyhcytcqk"
/translation="Mystekogaqhaqyygpyrlektigkgqtglyklgyhcytcqk"
VAIKIYNREKLSESYLMKVEREIAILKLIEHPHYLKLHDYFENKKYLXLYLEHYSGGE
LEDYLYKKGRUTPKEARKFFRQIISALDFCHSHSICHRDLKPENLLLDEKNNIRIADF
GMASLGYGOSGLETSGGSPHYACPEVIRGEKYDGRKADYWSGCYILFALLVGALPFDD
DNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMSEVDAARRLTLEHIQKHIWYIGGKNE
PEPEQPIPRKYQIRSLPSLEDIDPDVLDSMHSIGGFRDRKKLLQDLLSEEENQEKMIY
FLLLDRKERYPSQEDEDLPPRNEIDPPRKRTDSSPMLNRHGKRRPERKSMEVLSVTDGG
SPVPARRAIEMAQHGQRSRSISGASSGLSTSPLSSPMYTPHSSPRGSPLFTPKGTPVH
TPKESPAGTPNPTPPSSPSVGGVPWRARLNSIKNSFLGSPRFHRRKLQVPTPEEMSNL
TPEGSSPELAKKSWFGNFISLEKEEQIFVYIKNSPLSSTADIYHAFLSITSLSHSYIS
OTSFRAEYKATGGPANFQKPVKFQVDITYTEGGEAQKENGIYSVTFTLLSGPSRRFKR
VVETIQAQLLSTHDPPAAQHHSEPPPAPGLSWGAGLKGQKVATSYESSL*

76 a 716 c 683 g 344 t
                                                                         þ
                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
53. .2077
                                                                                                                                                                                                                                        /codon_start=1
/protein_id="CAD20436.1"
/db_xref="GI:18098147"
                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                               /note="unnamed protein product"
                     32.2%;
70.1%;
         0;
        Score 961; DB 6; 1
Pred. No. 4.7e-171;
0; Mismatches 435;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                Length 2219;
          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
          195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT 07-JAN-2002
          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1958
          6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                             20
                                                                         밁
                                                                                         9
                                                                                                                           멍
                                                                                                                                                  Š
                                                                                                                                                                           B
                                                                                                                                                                                                  Q
                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                             Ş,
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                      닭
                                                                                                 1119
                      1095
                                                                          1035
                                                                                                                                                    1059
1239
                                                                                                                         975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        159
                                                                                                                                                                             915
                                                                                                                                                                                                                                861
                                                                                                                                                                                                                                                        939
                                                                                                                                                                                                                                                                                  108
                                                                                                                                                                                                                                                                                                            879
                                                                                                                                                                                                                                                                                                                                    741
                                                                                                                                                                                                                                                                                                                                                              819
                                                                                                                                                                                                                                                                                                                                                                                        681
                                                                                                                                                                                                                                                                                                                                                                                                                 759
                                                                                                                                                                                                                                                                                                                                                                                                                                          621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTGTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG
                                                                                                                                                                    ACCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG 1178
                                                                                                                                                                                                                                                           CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAAGCTGCGCAGTGAGGAGGAGA 1118
                                                                                                                                                                                                                                                                                                                          AGATCCGCTCGCTGCCCAGCCTGGAGGACATCCGACCCCGACGTGCTGGACAGCATGCACT 974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAAGTATGACGGCCGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAAACAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT
    CCATGCTGAGCCGTCACGGGAAGCGGCAGAGCGGAAGTCCATGGAAGTCCTGAGCA 1298
                                                                 CACTGGGCTGCTTCCGAGACCGCAACAAGCTGCTGCAGGACCTGCTGCTGCCGAGGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                     CCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCCGACGTCCTAGAGAGCATGGCAT 1058
                                                                                                                                                                                                                                                                                                                                                                                                                     ATATAGGGGGCAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGCGTGTTCCACATGCCGCACTTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGTGGGGGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTCTGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGG
                                             AGGATGAGGACCTGCCCCCCGGAACGAGATAGACCCTCCCCGGAAGCGTGTGGACTCCC 1154
                                                                                                                                         914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                     1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            500
```

_		85	58	98	323	763 )78	703	<b>958</b>	398	583	33 8	778	463	718	09	658	378	338	538	338	478	325	265 418	358	214
Qy 582 AG	522 181	Qy 462 GG    Db 121 GG	Qy 402 TG	Qy 342 AG    Db 1 AG	Query Match Best Local Matches 131	BASE COUNT ORIGIN						CDS		• • • •	FEATURES source	JOURNAL	AUTHORS		JOURNAL	AUTHORS TITLE	REFERENCE	MSIN	VERSION KEYWORDS SOURCE	ACCESSION	LOCUS
AGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCC 641	TCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATG 581	GGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACT 521	TGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGG 461 	AGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAAATATT 401 	/ Match 27.4%; Score 818; DB 9; Length 1956; Local Similarity 68.6%; Pred. No. 4.5e-144; nes 1319; Conservative 0; Mismatches 410; Indels 195; Gaps 6;	427 a 640 c 579 g 310 t	PRESSEVIGETYWRAELSI WELLSEVEN FRESPRICTEN FRESPAGTENET  PESSEVIGETYWRAELASI KNOSTEGSPREHREKLIQVETPEEMSNLTPESSPELAKKSW FGNFI SLEKEEQIFVVI KDKPLSS I KADI VHAFLSI PSISHSVI IQTS GRAEYKATGG PAVFOKEVKFQVDITTYEGGEAQKENGIY SVYFTLLSGPSRRFKRVVETI QAQLLSTH DEDA ACHI GENERA FACTORA FROM THE FILLSGPSRRFKRVVETI QAQLLSTH	RSLPSLEDIDPDVLDSMHSLGCFRDRNKLLQDLLSEEERGEKMIYFLLDRKERKPSQ EDEDLEPRNEIDPPRKKVDSPHLNRHGKRRPERKSWFUSVTDGGSPVPARRAIEMAQ	/ -t-ails-ta-t-toil" titlierhykkigt.Tp KEARKFERQI ISALDFCHSHSICHRDIKPELLLLDEKNNIRIADFGMASLQVGBSLLE TSCGSPHYACPEVIRGEKYDGRKADVWSCGVILFALLVGALPFDDDNLRQLLEKVKRG TSCGSPHYACPEVIRGEKYDGRKADVWSCGVILFALLVGALPFDDDNLRQLLEKVKRG VFHMPHFIPDCOSLLKGMSEVDAARHIFLEHTOKHTGVTGGKNEDFEBGODTDNEVOT	/db_xref="G1:3217028" /db_xref="SPPREMBL:060843" /t==0314+05-#1 = Futurity # 110702000000000000000000000000000000000	<pre>/couon_start=3 /product="putative serine/threonine protein kinase" /protein_id="CAA07196.1"</pre>	days post natal"	/tissue_type="whole brain" /clone_lib="soares infant brain lNTB"	/organism="temmo sapiens" /db_xref="taxon:9606" /sex="female"		Submitted (02-UUN-1998) Stanchi F., CRIBI Biotechnology Centre, Universita' di Padova, Via G. Colombo 3, 35121 Padova, 35171 Trary	2 (Cases 1 to 1956) Stanchi,F.	21064499 11124703	,	., Bertocco,E., Toppo,S., Dioguardi,R., Simionati,B., Zimbello,R., Lanfranchi,G. and Valle,G.	utheria; Primates; Catarrhin to 1956)	ns Metazoa: Chordata: Craniata: Vertehrata.	AJ006701.1 GI:3217027 putative; serine/threonine protein kinase. human	The state of the s	HSA6701 1956 bp mRNA linear PRI 14-MAR-2001 Homo sapiens mRNA for putative serine/threonine protein kinase.

RESULT

10

밁

1986

TGTCAGA 1992

1721	2 CCAGTCCCACCGGGGACCCCGGGGGACACACCCCCCAGCCCCCGGCGG	Оу 166	20
1661 1149	2 CAGGCTCCCCGCGCTCCTC	2y 160 Db 111	ם ט
1601 1115	GCCCCCGCCCCCAGTGCCCGC	2y 154 0b 107	0 0
		7	$\mathbf{g}$
1541	CGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGGG	Σу 148	بر
1078	TTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTC	ду 142 Эв 106	9 9
06	ACAGCAGAGATCCCGTAGCGTGCATGCACCACGGGTGTCCTCCAGCCCTCTAA	100	ט ט
36	CCGATGCCGGGGGTGGTGCCCCGTGTACCCACCCGACGGCCTTGGAGATGGCCCAGC	130 95	
1301 954	2 TECTGAGCCGTCACGGGAACCGGCGACCAGAGCGGAAGTCCATGGAACTCCTGAGCATCA	124	₩ ₹
94	ACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCA	118 83	· & ×
üμ	TATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGG	112 77	₽ ₹
1121 774 (	GCTTCAGGGACCGCGAGAGGCTGCATCGCGGAGCTGCGCAGTGAGGAGAGAACC	106	₽ ₹
1061 714	CCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCAC	100	₩ ₹
1001	CCGGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCA	60	₩ ₹
941	CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC	5 8 8 4 8	F 73
881 540	IGCCAGAGCCTCCTGAGGGGAATGA	4 8 2	₩ ₹
821 480	TGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGG	y 762 b 421	₽ ₹
761 420	AATATGATGGCCGCCGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCG	7 702 5 361	₽ ⊀
701 360	TCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAA	7 642 5 301	4
300		241	ъ

7	\ <b>e</b>		· · · ·					•						٠,																			
	COMMENT	TOU	REFEREN AUTHO	Jou	AUT	JOURN	AUT	REFERENC	SOURCE	VERSION KEYWORDS	ACCESSION	RESULT AC02097	문	Qy .	Дb	Qy	₽ 	Qy	皮	Qy 	Db	ν.	뭥	Qγ	В :	Qy :	Db :	Qy 1	Db 1	Qy	Db 1	Qy 1	Db 1
	Ï	JOURNAL	EFERENCE AUTHORS	JOURNAL	HORS	JOURNAL	AUTHORS	ENCE	URCE ORGANISM	ON	NOILI	T 11 922	1726	2262 (	1666 1	2202 1	1606	2142 (	1564 7	2082 #	1504	2022	1444 F	1962 #	1384 7	1902 ₽	1324	842	264	1782 T	204	722	1150 A
Finishing Completed at Stanford Human Genome Center www-shgc.stanford.edu	his sequenced	ed (01-AUG-2002) DOE Joint Genome InstituWalnut Creek, CA 94598, USA	and Stanford Human	Submitted (12-JAN-2000) Production Sequencing Facility, DOE Joint Senome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA	DOE Joint Genome Institute.	ishe	OE Joint	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 134792)	ns	AC02	Homo sapiens chromosome 19 clone CTD-2105E13, complete sequence.	22 134792 bp DNA 141	CAGA 1729	CAGA 2265	TGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCGCCTGCGGCCCAGCACTTGT 1725	TGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGG 2261	GCATCTACTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGGTGG 1665	SCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGG 2201	ATATCACCTACACGGAGGGT	CAGAGCCCTCCCCGCGAC	CCGAGTACAAGGCCACGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGGTTG 1563	CGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGG 2081	ACGCCTTCCTGTCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCAAACGAGCTTCCGGG 1503	AFGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGG 2021	AGCAGATCTTCGTGGTCATCATAAGACATAACCTCTGAGCTCCATCAAGGCTGACATCGTGC 1443	ACCAPATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCC 1961	CGTCCCCAGAGCTGGCGAAGAAGTCCTGGTTTGGGAACTTCATCAGCCTGGAGAAGGAGG 1383	CTCCCGGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCTTGGACAAAGAAG 1901		TCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGT 1841	GGGTGCCCTGGAGGCGCGCCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCCGCT 1263	HAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCCTCGCT 1781	AGAGCCCGGCTGGCACGCCCAACCCCCACGCCCCGTCCAGCCCCAGCGTCGGAG 1203

```
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 692;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                             20725
                                                                                                                                                                                         20665
                                                                                                                                                                                                                                                       20605
                                                                                                                                                                                                                                                                                                                 20545
                                                                                                                                                                                                                                                                                                                                                                             20485
                                                                                                                                                                                                                                                                                                                                                                                                                                         20425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20185
                                                                                                                                                                                                                                                                                    2676
                                                                            2616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2256 CCCTGGCAGACGAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAGCC 2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                AAAGATAATAATAAATAAATAGCCTTGATCAGGGAAA 2951
                                                                                                                      CCCCACGACCTTCTGTACGGATTTGCTCTCCGGAAGGAATTCTGGTTTCGCGTGATCCTG
                                                                                                                                                                                    AAGGCCCAAGGAACATGTCGGGAGGGGGGGTGGACACAAAAACCGGCCTTGCCCTGCAGGG 2555
AAAGATAATAATAAATAGCCTTGATCAGGGACA 20878
                                                                                                                                                                                                                                                GGGGTGGGGTGGGAGGGACGGAGCTGGTTGGGGTTGGCTTAGCAGATCCGGACAGGGC
                                                                                                                                                                                                                                                                GGGGTGGGGTGGGGAGGGACCTGGTTGGGGTGGCTTAGCAGATCCGGACAGGGC
                                                                                                                                                                                                                                                                                                                              GGGAGGGAGGGGACCCCCCTCCACCCCCCTTCCGTGCCCCCCAACTGTGAATCTGTAAAT 2495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAAGGACAAGAAGCTCCTGGCCAACGAACGCGGACCCTCTGCCCTGACCCCACGGGGCCG 2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTGACCCCACGGGGCCG 2036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCAGCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGCCGAGGCCCCC 2375
                                                                                                                                                                                                                                                                                                                                                                        TGCAGCCCCACCCGGCCGGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGGCCGAGGCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quality: Phrap Quality >=40 99.4% of Sequence;
Estimated Total Number of Errors is 0.4.
NOTE: Shatter libraries failed to resolve dinucleotide repeat
region 104785-104880. Unsure number of repeat copies
104785-104880. Forced join 104826.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note-"NOTE: Shatter libraries failed to resolve dinucleotide repeat region 104785-104880. Unsure numb of repeat copies 104785-104880. Forced join 104826." 37447 c 36890 g 30294 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606"
/chromosome="19"
/clone="CTD-2105E13"
104785 104880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 678.8; DB 9; Pred. No. 9.8e-118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 134792;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                       2855
                                                                                                                                                                                                                   2795
                                                            20842
                                                                                           2915
                                                                                                                        20784
                                                                                                                                                                                      20724
                                                                                                                                                                                                                                                                                                              2060
                                                                                                                                                                                                                                                                                                                                             2675
                                                                                                                                                                                                                                                  20664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2042
                                                                                                                                                                                                                                                                                                                                                                                                                                      20484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
```

Qy

뮹 δ 밁 δ 밁 Ş 밁 Ş 밁 δÃ

밁

AK074411

RESULT 12

밁 Q В QΥ 밁 Š 밁 Š 밁 δÃ 밁 Š

```
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
  No.
                                                       뫄
                                                                                               Qy
                                                                                                                                                 ₽
                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                         δÃ.
                                                                                                                                                                                                                                                                                                                                                                                                                                         БР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity Matches 1075; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                       709 TGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            529 CAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAA 588
                                                                                            769 TCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTT
                                                                                                                                                                                                                                           123 GACCAGCTGTGGGTCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGGAGAAGTATGA
                                                                                                                                                                                                                                                                                     649 GACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGA 708
                                                                                                                                                                                                                                                                                                                                                                                  589 CAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGA 648
                                                                                                                                                                                                                                                                                                                                       63 CAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACAGCCTGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                    3 CACCCTCCTCCCCAGCCACAGGGATCTGAAACCTGAAAACCTCCTGCTGGACGAGAAGAA
CCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGT 888
                                                                                                                                              CGGCCGGAAGGCGGACGTGTGGAGCTGCCGCGTCATCCTGTTCGCCTTGCTGGTGGGGGC
                                                       TCTGCCCTTCGACG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEDO human cDNA sequencing project supported by Ministry of Economy, Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science, University of Tokyo (partly supported by Science and Technology Agency).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (14-FEB-2002) Sumio Sugano, Institute of Medical Science, University of Tokyo, Laboratory of Genome Structure, Human Genome Center; Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-8639, Japan (E-mail:cdnal@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sugano,S., Suzuki,Y., Ota,T., Obayashi,M., Nishi,T., Shibahara,T., Tanaka,T. and Nakamura,Y.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kawakami,T., Noguchi,S., Itoh,T., Shigeta,K., Senba,T., Matsumura,K., Nakajima,Y., Mizuno,T., Morinaga,M., Tanigami,A., Fujihyara,T., Ono,T., Yamada,K., Fujih,Y., Ozaki,K., Hirao,M., Ohmori,Y., Ota,T., Suzuki,Y., Obayashi,M., Nishi,T., Shibahara,T. Tanaka,T., Nakamura,Y., Isogai,T. and Sugano,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                oligo capping; fis (full insert sequence). Homo sapiens ileal mucosa cDNA to mRNA, clone_lib:KAIA clone:KAIA00425.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AK074411
3156 bp mRNA lines
Homo sapiens cDNA FLJ23831 fis, clone KAIA00425,
Homo sapiens mRNA for putative serine/threonine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished 2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fax:81-3-5449-5416)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AK074411.1 GI:18677005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 3156)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="ileal mucosa"
/clone_lib="KAIA"
/note="cloning vector: pME18SFL3"
1075 c 957 g 536 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="KAIA00425"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 491.8; DB 9;
Pred. No. 1.6e-82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches 372; Indels 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA linear PRI
clone KAIA00425, highly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 3156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ar PRI 15-FEB-2002, highly similar to protein kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Isogai,T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                           182
                                               256
                                                                                                                                                                                         768
                                                                                                                                                                                                                                                                                                                                                                                                                                    62
                                                                                                                                            242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                              밁
                                                                                                                          Š
                                                                                                                                                           밁
                                                                                                                                                                                       õ
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                     밁
δõ
                                 밁
                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1129
 1969
                                                                                                                               1849
                                                                                                                                                                                                                                                                                                                      1669
                                                                                                                                                                                                                                                                                                                                                                                   1609
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1249
                                                                                                                                                                                          1789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              382
                                                                                                                                                              991
                                                                                                                                                                                                                                                                                                                                                      836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGA 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCAGGGACCGCGAGAGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAA 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGCAGATCCGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGGG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCCTCTAAGCAGCCC 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---GANCGCCGCTCCCCCGCTGCCCCGCGGCGGCCATTGAGATGGCCCAGCACCGCCA 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGGGGTGGTGCCCCTGTACCCCACCCGACGGCCTTGGAGATGGCCCAGCACAGCCA 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTGCCTCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCCATGCTGAG 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGATTTACTTCCTCCTCGGACCGGAAAGAAAGGTACCCGAGCCAGGAGGATGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCCGAGACCGCAACAAGCTGCTGCAGGACCTGCTGTCCGAGGAGGAGCAACCAGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGCCATCCAACGGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTG 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATGCGGAG
 TCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCCGAGTA 2028
                                                                                               AGAGCTGGCGAAGAAGTCCTGGTTTGGGAACTTCATCAGCCTGGAGAAGGAGGAGCAGAT
                                                                                                                             GGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAAT 1908
                                                                                                                                                              CCGGAAACTGCAAGTTCCGACGCCGGAGGAGGTGTCCAACCTGACACCAGAGTCGTCCCC
                                                                                                                                                                             GCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCC
                                                                                                                                                                                                                          CTGGAGGGCGCGCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCCGCTTCCACCG
                                                                                                                                                                                                                                                       CTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCG
                                                                                                                                                                                                                                                                                       GGCTGGCACGCCCAACCCCACGCCCCGTCCAGCCCC----AGCGTCGGAGGGGTGCC
                                                                                                                                                                                                                                                                                                                      CCCGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCC 1668
                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGGGAGCAGCCCCCCCCCCAGTGCCCGCCTCCACACCCCTGCCCCGGCCCCCCAGGCTC 1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGGGTGGGGGGCGC 1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGAGTCCGGTCTTTTCCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGG 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGTCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTCCACCAGCCCACTCAGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGGCACGGCAAGCGGCCAGAACGCAAATCCATGGAGGTGCTCAGCGTGAC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACCGATGC 1308
                                 CTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCGTGCACGCCTT
                                                              ATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTT 1968
                                                                                                                                                                                                                                                                                                                                                                                                                   -ACCCCCAAGGGGACACCTGTCCACACGCCAAAGGAGAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          327
                                                                                                                                                                                                                                                                                                                      1728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         948
                                 1170
                                                                                               1110
                                                                                                                                                              1050
                                                                                                                                                                                          1848
                                                                                                                                                                                                                          990
                                                                                                                                                                                                                                                                                        930
                                                                                                                                                                                                                                                                                                                                                      876
                                                                                                                                                                                                                                                                                                                                                                                                                   835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               797
```

```
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 13
AB014885
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멅
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1171
                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGGCTTCCAGGTGGACATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCAGCACTTGTCAGA 1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTACACGGAGGGT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGGCCACGGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGGTTGATATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCCTGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGGTGGTGGAGAC 1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGAC 2208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (26-MAY-1998) Yasunori Sasakura, Kyoto University, Department of Zoology, Graduate School of Science; Sakyo-ku, Kyoto 606-8502, Japan (E-mail:sasakura@ascidian.zool.kyoto-u.ac. Tel:+81-75-753-4095, Fax:+81-75-705-1113)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABU14885
Halocynthia roretzi HrPOPK-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sasakura,Y., Ogasawara,M. and Makabe,K.W. Maternally localized RNA encoding a serine/threonine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Urochordata; Stolidobranchia; Pyuridae; Halocynthia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Halocynthia roretzi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AB014885
AB014885.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sasakura,Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Halocynthia roretzi early embryonic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HrPOPK-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98440280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the ascidian, Halocynthia roretzi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 3933)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (sites
                                                                             /TITAINS LA LION-"MSNAPQDGQYVGDYKLEKTLGKGQTGLVKLGVHCMTGKKVAVKI
/VLREKLSESVINKVEREIAMKLIEHPHILGHDVYENKKYLTLILLEVSGELFDYL
VQKGRLIFREARREFRQIISAMKLIEHPHILGHDVYENKKYLYLLILLEVSGELFDYL
VQKGRLIFREARREFRQIISAMKLIEHPHILGHDVYENKKYLYLLLLEVSGELFDYDLLRQ
QPEGFILETSCGSPHYACPFVINGERYDGRTADVWSCGVILFALLVGALFPDDDNLRQ
LLEKVKRGVYHIPHFVPPDAQNLLRGMIDVRPDKRLSLQOVLQHPWMRPGSNSVEGVL
VTPDPVPVPIDCVPLPEEESVDPDVLASMTSLGCFCNKEKLKNLITEEQNTEKVVYY
MLLRRKKRYPSFDDDADSLFCKHPDAPRKNTSLGSFSLSSNGDDWCVNPIPQRKMSAE
SLCLTDSSSPLLSRKKSTETHQRSQSLTGESNGRLVCNLSDQTKAESKSRLNGTPVRR
GTTCSSNQPVPQINTPASPNUWRQRLASLKNTFMGSPRFHRKMQAPSSEDVENQGNS
SSELSKRSWFGNFMSSRYSSTEHCDELPYAIAYKNRTLNSVKSELVHAFLSIPNLTHS
AFSLISGPIRRYKRVLELLQMQMSIVAANQQNKTSGEFSAFSHEIQQLCKTVNNLHQD
NSTMAINNPNHKSKVK"
3933
                                                          MVSPTRFRCDYRSSGTSTTSVFHQRSIKFQVDIIQHSSLDRQENGKKPSSQTVGSFTI
                                                                                                                                                                                                                                                                                                                                                                           /gene="HrPOPK-1"
166. .2262
                                                                                                                                                                                                                                                                                         /protein_id="BAA28663.1"
/db_xref="GI:3172111"
                                                                                                                                                                                                                                                                                                                                  /codon_start=
                                                                                                                                                                                                                                                                                                                                                      /gene="HrPOPK-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="egg"
/dev_stage="early (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Halocynthia
/db_xref="taxon:7729"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:3172110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ogasawara, M. and Makabe, K.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                       _lib="fertilized
                                                                                                                                                                                                                                                                                                                                                                                                                                                         embryonic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bр
mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GGGGAGGCGCAGAAGGAGAACGGCATCTA 1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       roretzi"
                                                                                                                                                                                                                                                                                                                                                                                                                                     egg"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       egg tissue_lib:fertilized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kyoto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       egg
```

ORIGIN BASE COUNT

1138

ρ

/gene="HrPOPK-1" /note="19 A nucleotides" / 803 c 751 g 124

1241 t

Matches 682;

Conservative

0;

350; Indels Length 3933;

6

Query Match Best Local Similarity

15.0%; 65.7%;

Score 446; DB 3; Pred. No. 6.9e-74; Mismatches

Qy

1110 AGGAGGAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATC 1169

```
1050 GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGGCTGCATCGCGAGCTGCGCAGTG 1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156 CACCCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCCAAAGGAC 215
                                                                                                                                                                                    CGGGTAGCCATGCGGAGC--CTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGA 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACGGGGCTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGGAGAACCTGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGTGATCGATTGTGTCTCTCTCCCCGAAGAAGAATCCGTTGATCCGGATGTTCTCGCTT 1075
                                                                                                                                                                                                                                                                                                                                                                                                 GAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGA 815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGC 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATATCTGTACCTCATCCTGGAATTGGTTTCAGGAGGCGAGTTGTTCGATTATCTCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCCGCAGCCCGGACAATATGTCGGACCGTACAAGCTGGAAAAGACTTTGGGAAAAAGGCC 235
                                                                                                                                                                                                                                          GGATGAGGCCCGGTAGCAATTCCGTCGAAGGAGTCTTGGTGACTCCTGACCCAGTGGTGC 1015
                                                                                                                                                                                                                                                                                             GAATGATTGATGTTAGGCCGGACAAGAGGTTGAGTCTACAACAAGTCTTGCAACATCCCT 955
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACGAGGTGTTTACCACATTCCCCACTTTGTTCCTCCCGATGCTCAAAACCTTCTCCGAG 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTTGTGGGTGCTTTACCATTTGATGATGACAACCTGCGACAGCTTTTGGAGAAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCC 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGATGAGAAGAACAACATCAAGGTTGCTGATTTCGGGATGGCGTCACTTCAACCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGA 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGATTATTGCCACAATCACAATGTTTGTCACAGAGATCTCAAAACCTGAAAACCTTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAA 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCATGAAATTGATCGAGCATCCTCATATACTGGGACTACATGATGTTTATGAGAATAAAA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAACAGGCCTCGTTAAACTCGGTGTTCACTGCATGACTGGGAAGAAAGTAGCCGTCAAAA 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                    935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                             片
                                                                                                         Ω
                                                                                                                                                              밁
                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
AF316542
                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1196 CAAGTTTTGATGATGATG 1213
        270
                                                                                                                                                    202 CGCGTCCAGTGGCGCAGGCTCAATATTGCGGTCCATACAAACTTGAGAAGACGCTTGGAA 261
                                                                                                                                                                                                    150 CCCACCCACCCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCA 209
TCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGA 329
                                                   AAGGTCAAACTGGGTTGGTAAAAACGGGAACTCATTGCATTACGGGCCGTAAAGTGGCAA
                                                                                                   AAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCA 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGCTGTGAGGACCAGG 1187
                                                                                                                                                                                                                                                                  640;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Crump, J.G. and Bargmann, C.
Direct Submission
Submitted (25-OCT-2000) HHMI, UCSF, Department of Anatomy, Box 0452, San Francisco, CA 94143-0452, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 3059)
Crump, J.G., Zhen, M., Jin, Y. and Bargmann, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF316542 3059 bp mRNA linear INV 18-JAN-2001 Caenorhabditis elegans serine/threonine kinase SAD-1 mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The SAD-1 kinase regulates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rhabditoidea; Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF316542.1
                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 3059)
                                                                                                                                                                                                                                                                                                                                                                                              921
                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                               VVGQNCFRVEYKRGPTVGGSVFSRGIKMNVDIIFSPQQVVIAGETPTYVVQFVLLAGP
VRRFKRLVEHLSAILQNSTQQRADRQQQAALMVRPRRLSDSSVGSACSDSESNASSIN
MIARHSDKTETTSATSSDPYGPSPSMRSVGSGTANSYKSPTPHRRNTTAVTASSSSAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGSSSSGSYSARAGEDRDRGRAASRSTNSYHYYTÖPVDPOTLAEAARHVRDAQERRES
RDSGRGSSKEKDRSDKSASSSCKNDASSTSHKXSPSYWASESVVVSSSTWNS
TNSSTNSLIAGNSQTSIGSTSGPWRSKLNNIKSSSPGTFRFHRKMSNGTAESDSEDS
QMIDTTDLVKKSWFGSLASSMSYERDDTHCVPVQGKTLNSIKAELIRAFLQIHELSHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AMIEVDPGKRYSLADVFKHPWVSGTTKADPELELPMSQVVQTHVIPGEDSIDPDVLRH
MNCLGCFKDKQKLINELLSPKHNTEKMVYFLLLDRKRRRPAQEDDTEIVLRGAAQNND
PPKKRYDSSRYSRYPMGSIADGSPINPRKTYGRNQKSGRHSSLGGSPYESPRSSTRDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation-"MFEALKEVLGEINSKLAAVNNELSSKIMSENIVSTRPVAQAQYCGPYKLEKTLGKGQTGLVKTGTHCITGKKVALKLIEHVKUKEKLSESYLGKVEREIALMKLIEHPHVLHLYDYVENKKYLYLLLEHVSGGELFDYLVRKGKLMSKEARKFFRQIISALDFCHAHNICHRDLKPENLLLDERNNIKVAAFGMASLQVEGSNLETSCGSPHYACPEVIRGEKVEGGNETSGCFYIKYALLVGALPFDDDNLKNLLEKYKRGVFHIPHFYPADVQSLLRKYDGRKADVWSCGVILYALLVGALPFDDDNLKNLLEKYKRGVFHIPHFYPADVQSLLR
                                                                                                                                                                                                                                                                                                                                                                                                                                            NRYGPSSSSSGSYSNNADYSYHPEYSQRSNGSSAPKNQYSPGSQRSFAFSMFNKADKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="serine/threonine kinase SAD-1"
/protein_id="AAG50270.1"
/db_xref="G1:12276122"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'chromosome-"X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ∕organism="Caenorhabditis elegans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'codon_start≖1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'db_xref="taxon:6239"
                                                                                                                                                                                                                                                                                        13.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:12276121
                                                                                                                                                                                                                                                                                                                                                                                              653 c
                                                                                                                                                                                                                                                                                     Score 391.2; DB 3; Pred. No. 1.5e-63;
                                                                                                                                                                                                                                                                                                                                                                                           712 g
                                                                                                                                                                                                                                                             Mismatches 393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         presynaptic vesicle clustering
                                                                                                                                                                                                                                                                                                                                                                                         773 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caenorhabditis
                                                                                                                                                                                                                                                                                                             Length 3059;
                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                          <u>ن</u>
                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                          1;
```

밁 Š ₽ δ 밁 Ş

1076 CCATGACCTCTCGGGATGCTTTTGTAATAAGGAGAAACTTCTCAAAAATCTTATTACAG

Ş 망

밁 Ωy 8 δÃ 밁 δ 밁 Q 밁 Š В Ş 밁 QΥ 8 S В Q 밁 δÃ 밁 Ş 밁 δ

816

776

696

576

476 456 416 356

296

276

236 216 176

396

656 GATTTCTTTTGGAAACTAGTTGTGGGTCCCCCACTATGCTTGTCCTGAAGTTATCAGGG

GGGAGAGGTACGATGGTCGCACAGCAGATGTGTGGAGTTGTGGGAGTTATCTTGTTTGCAC

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                RESULT 15
AY060288
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                              S
                                      KEYWORDS
                                                          VERSION
                                                                            ACCESSION
                                                                                                DEFINITION
                                                                                                                  Cos
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        750 TCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGA 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGA 689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATTACTAGACGAGAGGAATAACATAAAAGTAGCAGATTTTGGAAATGGCTAGTCTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCGCTCGATTTTTGCCATGCTCATAACATTTGTCATCGAGATTTAAAAACCGGAAAACT 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGTGCGGAAAGGACGGCTGATGTCGAAAGAAGCGCGAAAGTTTTTTCGTCAAATCATCT
                                                                                                                                                                                                                                                                                      CAAAACACACTGAAAAGATGGTATACTTTCTCCTTGATCGAAAAACGACGCGCC 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGTGAAACGGGGCGTCTTCCACATGCCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGCATTATTAGTTGCTCCGCTTCCATTTGATGATGACAATCTCCCGAAATCTTCTCGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCCTAAAAGCCCCGAGAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTTCCGCCAGATTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACC 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGA 389
                                                                                                                                                                                                                                                                                                                          AGGAGGAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATC 1169
                                                                                                                                                                                                                                                                                                                                                                  ATATGAACTGCTTAGGATGTTTCAAAGACAAACAGAAGTTGATTAATGAATTATTGTCGC 1158
                                                                                                                                                                                                                                                                                                                                                                                                    GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTG 1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCGGGCAATGATAGAAGTAGACCCGGGGAAACGATATTCCCTAGCCGACGTGTTCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTGAAACGTGGAGTTTTTCATATCCCACATTTCGTACCTGCTGATGTGCAGAGTTTAC 921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCGGGGTGAAAAGTACGACGGTCGAAAAGCAGACGTTTGGAGTTGTGGCGTTATCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCT 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAAGGGTCGATGTTGGAGACGAGTTGTGGATCTCCACATTATGCATGTCCAGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAAGAAATATTTATATTTGCTACTAGAACATGTTAGCGGTGGCGAGCTGTTCGACTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGCAATTATGAAGTTGATAGAGCATCCACATGTGCTTCATTTGTACGATGTCTACGAAA 441
                                                                                                                                                                                                              CTGCACAGGAAGACGA 1234
                                                                                                                                                                                                                                                CCAGCTGTGAGGACCA 1185
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTTGTGCAGACGCACGTAATACCTGGTGAAGATTCGATTGATCCGGATGTCTTGAGGC 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGA 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCCATGG---GTATCCGGAACAACAAAGGCAGATCCTGAATTTGGAGCTTCCAATGTCAC 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAAC 929
Drosophila
                                      AY060288.1 FLI_CDNA.
                                                                          Drosophila melanogaster
AY060288
                                                                                                                  AY060288
                  Drosophila melanogaster
melanogaster
                                                        GI:16648123
                                                                                            GH13047 full length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                mRNA
                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
밁
                                                                            Matches
                      344 CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG 403
```

```
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This clone was sequenced as part of a high-throughput process to sequence clones from Drosophila Gene Collection 1 (Rubin et al., Science 2000). The sequence has been subjected to integrity checks for sequence accuracy, presence of a polyh tail and contiguity within 100 kb in the genome. Thus we believe the sequence to reflect accurately this particular cDNA clones. However, there are artifacts associated with the generation of cDNA clones that may have not been detected in our initial analyses such as internal priming, priming from contaminating genomic DNA, retained introns due to reverse transcription of unspliced precursor RNAs, and reverse transcriptase errors that result in single base changes. For further information about this sequence, including its location and relationship to other sequences, please visit our Web site (http://fruitfly.berkeley.edu) or send email to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Meoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 5609)

Stapleton, M., Brokstein, P., Hong, L., Agbayani, A., Carlson, J., Stapleton, M., Brokstein, P., Hong, L., Agbayani, A., Carlson, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (29-OCT-2001) Berkeley Drosophila Genome Project, Lawrence Berkeley National Laboratory, One Cyclotron Road, Berkeley, CA 94720, USA Sequence submitted by:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stapleton, M., Brokstein, P., Hong, L., Agbayani, A., Carlson, J., Champe, M., Chavez, C., Dorsett, V., Farfan, D., Frise, E., George, R., Gonzalez, M., Guarin, H., Li, P., Liao, G., Miranda, A., Mungall, C.J., Gonzalez, M., Pacleb, J., Paragas, V., Park, S., Phouanenavong, S., Wan, K., Wan, K., Park, S., Phouanenavong, S., Wan, W., Park, S., Phouanenavong, S., Wan, S., Phouanenavong, S., Phouanenavong, S., W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Berkeley Drosophila Genome Project
Lawrence Berkeley National Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yu, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cdna@fruitfly.berkeley.edu.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Berkeley, CA 94720
            Similarity
                                                                                                                                                                                                                                                   1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lewis, S.E., Rubin, G.M. and Celniker, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TNAPSYGQISEGSPLTPRRQAFNFRSYSSTRNHQRRSPTTVTSSVRSSSYHSPTRCNS
PMSSAQQQANAISRPSSPAAGTRHSTYGDRDBSGHHSSVSRTPSHSSQQKSIEGDVVVV
REPRIERRDSLRQERGGSPRDRGDCGIPPGSPGGNSSGSTSASPSVHHRANGSPTIA
ISMFHDPDSNSYVNPNGSPMANNSSPGMFGSPCNTPGGQLMKTRLTNIKNSFLJSSPRF
IRRKMQVSADEVHLTPESSPELTKRSWFGNLTTEKDETFTILVKGKPIATNAHLIH
HRRKMQVSADEVHLTPESSPELTKRSWFGNLTTEKDETFTILVKGKPIATNAHLIH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="GH13047p"
/product="GH13047p"
/protein_id="AAL25327.1"
/protein_id="AAL25327.1"
/db_xref="G1:16648124"
/db_xref="F1YBASE:FB9n0036544"
/translation="MASLOPAGSMLETSGSBHYACPEVIRGEKYDGRKADVWSCGVI/translation="MASLOPAGSMLETSGSBHYACPEVIRGEKYDGRKADVWSCGVI
LYALLVGALPFDDDNLROLLEKVKRGVFHIPHFVPPDCQSLLRGMIEVNPDRRLTLAE
LYALLVGALPFDDDNLROLLEKVKRGVFHIPTATAVDDPVLNALCSLGCFKEKEKLIQ
ELLSSGHYTEKVITFILLERKRRRPALEDDDEIAGKSRSELDAVDPPKRRLDTCRING
ELLSSSGHYTEKVITFILLERKRRRPALEDDDEIAGKSRSELDAVDPPKRRLDTCRING
                                                                                                                                                                                                                                      NRELQSERQATTMSGSAIA"
1224 c 1164 g
                                                                                                                                                                                                                                                                                                                                                                                                                     AFLSMAELSHSVVSPTSFRVEYKRNGNGPVMFQRHVKFQVDISAICKQGDIADMLFAL
TFTLLSGNIRRFRRICEHIQSQVCSKRFPGPSSPPTVTSVTQAVSESSSCGSVSSERL
                                                                                                                                                                                                                                                                                                                                                                   {f SYKRQVIENDMENDSIFSYKSGNGRRASTTNNNNANPVDIPGSPIAVRSNSETAEHEH}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Longest ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="CG6114"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="alignment with genomic scaffold AE003529"
/db_xref="FLYBASE:FBgn0036544"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /map="72A5-72B1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /strain="y; on bw sp"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="CG6114"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  organism="Drosophila"
12.5%;
      Pred. No. 3, 2e-60;
                                                                                                                                                                                                                                            1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        melanogaster"
                                                                    DB 3;
```

CTAATCGATCACCACACGTCCTTGGCCTGAGCGATGTGTACGAGAACAAGAAGTATTTG 61

563;

Conservative

0;

Mismatches

Indels

**ω** 

Gaps

```
Š
                                                             Q
                                  밁
                                                                                                 ₽
                                                                                                                               δÃ
                                                                                                                                                                   밁
                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                  용
                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
1184 CAGGACCTGCCTCCCCGGAA 1203
                                                 1124 GAAAAGATGATATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 1183
                                                                                                                 1064 GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGAGGAGGAGGAGGAGCCAA 1123
                                                                                                   719
                              779 GAGAAGGTTATATTTTCCTGTTGCTCGAGCGCAAACGAAGACGACCTGCGCTGGAGGAT 838
                                                                                                                                                                     659
                                                                                                                                                                                                                                                  944 GGCGGGAAACACGAGCCAGACCCGTGCCTGGCCCGGGGGTAGCCATG 1003
                                                                                                                                                                                                                                                                                                    542
                                                                                                                                                                                                                                                                                                                 884 GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGGAGCAAATTCAGAAACATCCTTGGTACCTA 943
                                                                                                                                                                                                                                                                                                                                                                   482
                                                                                                                                                                                                                                                                                                                                                                                                 824
                                                                                                                                                                                                                                                                                                                                                                                                                          764 GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC 823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             362 TACGATGCCGCAAGGCGGATGTCTGGGTCCTGTGGGGTCATCCTCTATGCCCTCCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404 TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              644 CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAA 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              584 AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTGCCCTGCAGGTGGGGGACAGCCTC 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 524 TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               464 AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTC
                                                                                                                                                              ACGTTATTCCCACAGCCACCGCGTGGATCCGGATGTGTTGAACGCGATTTGCTCGCTG 718
                                                                                                                                                                                                                                                                                                                                                                                   GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATC 883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTG 763
                                                                                                                                                                                           CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTG 1063
                                                                                                                                                                                                                             GCTGGCGGCAAAGGG----GAGCTGGAGCTGGAGCTGCCAATGATGGAGGTGGTGCAGACA 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGGAGACCTCCTGCGGCAGCCCACACTACGCGTGTCCAGAGGTCATACGGGGCGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCTGTTTCAAGGAGAAGGAGAAACTCATCCAGGAACTGCTCAGTTCAAGTCACAATACG 778
                                                                                                                                                                                                                                                                                               GAGGTCAATCCGGACCGGCGGCTCACGCTGGCTGAAATCAACCGGCATCCGTGGGTCACA 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATTGACGCCGAAGGAGGCGCGCAAGTTCTTCAGGCAAATCATCTCCGCCCTGGATTTC
                                                                                                                                                                                                                                                                                                                                                              TGCCACTCGCATTCGATTTGCCATCGCGACTTGAAGCCGGAGAATCTGCTGCTGGACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            523
```

Search completed: April 21, 2003, 23:04:02 Job time : 5185.18 secs

멍

839 GATGATGAGATTGCGCAAAA 858

```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq length:
seq length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         April 21, 2003, 19:23:30; Search time 409.371 Seconds (without alignments) 16393.314 Million cell upda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 gtcgacccacgcgtccgcgg.....aaaaaaaagggcggccgcta 2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2185239 seqs, 1125999159 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-003-690-1
   110:
111:
112:
114:
115:
116:
116:
117:
120:
120:
120:
120:
120:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                              /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1982.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1988.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Geneseq_101002:*
                                                                                                        /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1992.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA193.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA194.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA195.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA195.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1997.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1997.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1998.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA2002.DAT:*
                           /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
                                                                                         /SIDS2/gcgdata/geneseq/geneseqn-embl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4370478
                                                                                      L/NA1999.DAT:*
L/NA2000.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cell updates/sec
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Human kinase PKIN-
Polynucleotide se
Human protein kin
Human protein kin
Human PKIN-18 cDN
Human HrPOPK-1 ho
Human Ser/Thr kina
Human lung cancer
Drosophila melanog

## ALIGNMENTS

RESULT 1
AAD26464
ID AAD2 AAD26464; AAD26464 standard; cDNA; 2897 BP. 26-MAR-2002 (first entry)

Human kinase PKIN-17 cDNA.

Human; kinase; PKIN-17; cancer; leukaemia; adenocarcinoma; osteoporosis; immune disorder; atherosclerosis; Crohn's disease; Hodgkin's disease; Acquired Immune Deficiency Syndrome; ADD; Addison's disease; anaemia; allergy; asthma; adult respiratory distress syndrome; multiple sclerosis; autoimmune thyroiditis; bronchitis; diabetes mellitus; osteoarthritis; good pasture's syndrome; Graves' disease; pancreatitis; psoriasis; rheumatoid arthritis; ulcerative cylorosis; Cushing's syndrome; hepatitis; hypothyroidism; cerebral palsy; cataract; angina pectoris; cardiovascular disease; hypertension; vasculitis; myocarditis; obesity; congestive heart failure; ischaemic heart disease; lung tumour; gout; congestive heart failure; ischaemic heart disease; lung tumour; gout; liver; Niemann-Pick's disease; gene therapy; ss.

Homo sapiens.

CDS Location/Qualifiers
1..2385 /\*tag= a /product= "Human PKIN-17 protein"

WO200196547-A2.

20-DEC-2001.

2001WO-US19444.

```
δÃ
                                                                                  밁
                                                                                                                      Qγ
                                                                                                                                                                  В
                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                               CC treating a disease or condition associated with decreased expression of CRIN and a composition comprising PKIN antagonist is useful for treating a disease or condition associated with decreased expression of CC a disease or condition associated with overexpression of pKIN. The CC disorders include cancer (leukaemia, adenocarcinoma, lymphoma, melanoma, CC myeloma, sarcoma, teratocarcinoma, denocarcinoma, lymphoma, melanoma, CC (Acquired Immune Deficiency Syndrome (ADDS), asthma, Addison's disease, atherosclerosis, anaemia, allergies, adult respiratory distress syndrome, CC atherosclerosis, selevosis, Good pasture's syndrome, Graves' disease, cautoimmune thyroiditis, gout, bronchitis, Crohn's disease, diabetes costeoarthritis, osteoporosis, pancreatitis, soriasis, Reiter's syndrome, CC osteoarthritis, osteoporosis, pancreatitis, soriasis, Reiter's syndrome, CC rehumatoid arthritis, Sjogren's syndrome, uveitis, ulcerative colitis, CC bacterial, parasitic, fungal, viral, protozoal and helminthic infections) CC costing's syndrome, hypothyroidism, cerebral palsy, cataracts); cardio CC cushing's syndrome, hypothyroidism, cerebral palsy, cataracts); cardio CC vascular disease (arteriovenous fistula, hypertension, vasculitis, CC congestive heart failure, angina pectoris, myocarditis, CC dischaemic heart disease, chronic bronchitis, lung tumours); lipid CC disorder (fatty liver, Fabry's disease, Niemann-pick's disease, CC hypocholesterolaemia, obesity). PKIN DNA is useful for assessing CC toxicity of a test compound and in gene therapy. The present sequence cost is human PKIN-17 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yue ...
Gandhi AR, 11...
Ramkumar J, Griffin Jn,
Baughn MR, He A, Thornton M,
Lo TP, Khan F, Recipon SA, I
                                                                                                                                                                                                                                                                                                                                 Matches 2747;
                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2897 BP; 599 A; 921 C; 877 G; 500
      307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          corresponding cDNAs. A composition containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to human kinase PKIN proteins and their
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 5; Page 188-189; 197pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New polypeptides, useful for diagnosing, treating or preventing disorders of growth and development, cardiovascular and lipid, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUN-2000;
07-JUL-2000;
                                                                                                                                                                                   224 CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC
                                                                                                                                                                                                                                                                23-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                  Local Similarity
CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG
                   CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAAACAAGAAATATTTG
                                                                                                 CGGGAGAGAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGGAGATCGCCATCCTGAAG
                                                                                                                                                              CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC
                                                                                                                                                                                                                                          CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             such as cancer, comprise human kinase polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P, Bandman O, Borowsky ML, Au-Young J, Lu Y;
Tribouley CM, Walia NK, Yao MG, Lu DAM, Greenwald S, Griffin JA, Kearney L, Burford N, Nguyen DB, Tang He A, Thornton M, Hafalia A, Patterson C, Gururajan an F, Recipon SA, Azimzai Y, Policky JL, Ding L;
Elliott VS, Thangavelu K, Batra S, Ison CH;
                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; 2000US-212073P.
2000US-213467P.
2000US-215605P.
2000US-216605P.
2000US-218372P.
2000US-228056P.
                                                                                                                                                                                                                                                                                                                                              91.3%;
99.1%;
                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                              Score 2722.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                           T; 0 other;
                                                                                                                                                                                                                                                                                                                                                               DB 24; Length 2897;
                                                                                                                                                                                                                                                                                                                         23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PKIN agonist is useful for
                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Greenwald SR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gururajan
                                                                                                                                                                                                                                                                                                                         1; Gaps
                                      403
                                                                                                                                                                                                                                          186
366
                                                                                                                                                                                                    283
                                                                              306
                                                                                                                      343
                                                                                                                                                            246
```

```
Qy
      밁
                           5
                                                      밁
                                                                                                       В
                                                                                                                            Qy
                                                                                                                                                     밁
                                                                                                                                                                           Š
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                            ΩV
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멎
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                1184 CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCCGGAAGCGTGTGGATTCTCCCATG
                                                                                                                                                                                                                                                                                                                                                                               1004
                                                                                                                                                                                                                                                                                                                                                       967
                                                                                                                                                                                                                                                                                                                                                                                                                             944
                                                                                                                                                                                                                                                                                                                                                                                                                                                      847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            464
AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGA 1483
                                                               AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC 1423
                                                                                                                GATGCCGGGGGTGGTGCCCCCCTGTACCCACCCGACGGCCTTGGAGATGGCCCAGCAC
                                                                                                                                                                         CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGGAAGTCCATGGAAGTCCTGAGCATCACC
                                                                                                                                                                                                                                                  GAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC
                                                                                                                                                                                                                                                                                                             GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGGAGGACCAA 1123
                                                                                                                                                                                                                                                                                                                                                               GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA 943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                                                   GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCAC
                                                                                                                                                  CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC
                                                                                                                                                                                                                                                                           GAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC
                                                                                                                                                                                                                                                                                                 GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGCAA
                                                                                                                                                                                                                                                                                                                                                 CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAA
                                                  AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAACAACCATCCGCATTGCAGACTTCGGCGATGGCGTCCCTGCAGGTGGGGGACAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                  GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGAGACCAĞCTGCGĞĞTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1386
                                                                                                  1326
                                                                                                                         1363
                                                                                                                                                  1266
                                                                                                                                                                          1303
                                                                                                                                                                                                   1206
                                                                                                                                                                                                                         1243
                                                                                                                                                                                                                                                                          1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                  906
                                                                                                                                                                                                                                                 1146
                                                                                                                                                                                                                                                                                                                                                  1026
                                                                                                                                                                                                                                                                                                                                                                         1063
                                                                                                                                                                                                                                                                                                  1086
                                                                                                                                                                                                                                                                                                                                                                                                  966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  426
```

δÃ

밁 Š 밁 Š 밁 Ş 밁 Š

```
1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1447
                                                                                                                                                                                                                                                                                                                                                                  2204
                                                                                                                                                                                                                                                                                                                                                                                                       2107
                                                                                                                                                                                                                                                                                                                                                                                                                                     2144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1544
                                                                                                                                                                                                                                                                                                                                    2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1964
2467
                                                               2407
                                                                                              2444
                                                                                                                                 2347
                                                                                                                                                               2384
                                                                                                                                                                                                2287
                                                                                                                                                                                                                                  2324
                                                                                                                                                                                                                                                                 2227
                                                                                                                                                                                                                                                                                                   2264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACCGGCCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTTGGGCTCCCCTCGCTTT
                                                                                                                                                                                               CCACCCGGCCGAGACCCAGAGCTGAGCAGCTCTCCCCGCCGAGGCCCCCCAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAA 1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCGCCGGGGAGCAGCCCCCCGCCCCCAGTGCCCGCTCCACACCCCCTGCCCGGCCCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCCGCGGACGGGACGGCAGCGGAGGTGGTGGC 2143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT 1963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCCTCGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCTCCCCGCGCTCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCGCCGGGGAGCAGCCCCCGCCCCCCAGTGCCCGCTCCACACCCCCTGCCCCGGCCCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCCAGGGGTGGG
                                                               GGGGACCCCCTCCACCCCCTTCCGTGCCCCCCAACTGTGAATCTGTAAATAAGGCCCA
                                                                                              GGGGACCCCCCTCCACCCCCCTTCCGTGCCCCCCAACTGTGAATCTGTAAATAAGGCCCA 2503
                                                                                                                                GACGAGAAGGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                                                                                                                                                                                                                    GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                    GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                     ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAA
                             AGGAACATGTCGGGAGGGGGTGGACACAAAAACCGGCCTTGCCCTGCAGGGATGGGGCT 2563
AGGAACATGTCGGGAGGGGGGTGGACACAAAAACCGGCCTTGCCCTGCAGGGATGGGGCCT
                                                                                                                                                                                                                                                                                                                                                  1723
                                                                                                                                                                                                                                                                                                                                    2226
                                                                                                                                                                                                                                                                                                                                                                    2263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1543
                                                                                                                                2406
                                                                                                                                                                                                                                                                                                   2323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2083
2526
                                                               2466
                                                                                                                                                               2443
                                                                                                                                                                                                2346
                                                                                                                                                                                                                                                                                                                                                                                                     2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1866
```

ρ 밁 Ş Ъ δÃ 밁 Š 밁

밁 õ 밁 õ 밁 Ş 밁 δõ 밁 Š D Ş 밁 Qy В δÃ В Q 밁

õ

2564

2623

novel protein kinases have been identified as members of the tyrosine or serine/threonine kinase (PTK and STK) families. The polynucleotides encoding protein kinases and the polypeptides may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate kinase expression. For example, them

may be used to treat

```
\
.
AASO6717
ID AASO
XX AASO
XX AASO
XX AASO
XX AASO
XX AASO
XX POly
XX Huma
KW meta
KW repr
XX WO20
XX YO20
PM WO20
PM S1-M
XX YX
XX ISM
PF 22-N
XX WPI
PR P-PS
XX Nucl
PT diam
XX AASC
CC nove
CC or se
CC prew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2744
                                                                                          Nucleic acids encoding human kinase polypeptides, useful for preventing diagnosing and/or treating e.g. cancer, immune, cardiovascular and neuronal-associated diseases, and microbial infections -
                                                                                                                                                                   Plowman GD,
Flanagan P,
                                                                                                                                                                                                                                                                                                                            Human; protein kinase; PTK; STK; cancer; cardiovascular disease; metabolic disorder; immune related disease; neurological disorder; neurodegenerative disorder; inflammatory disorder; infectious diserproductive disorder; gene therapy; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAS06717 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2767
                                                                                                                                                                                                                                                                 31-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                          AAS06717;
                                                                                                                                     P-PSDB;
                                                                                                                                                                                                                                            22-NOV-2000;
                                                                                                                                                                                                                                                                                    WO200138503-A2
                                                                                                                                                                                                                                                                                                                                                                                Polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                     12-SEP-2001
                                                                                                                                                                                                  (SUGE-) SUGEN INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTGTGTCGCCCAACCCCCTCTTCCCGGGCCCCTCCTCCCTGGTCC-TCCCCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001-343950/36.
DB; AAU03517.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACAAAAAAA 2897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGGGGAGGGACGGGAGCTGGTTGGGGTGGCTTAGCAGATCCGGACAGGGCCCTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGGGGAGGGACGGAGCTGGTTGGGGTGGCTTAGCAGATCCGGACAGGGCCCTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATTTTATTTATTGATTAATTTATTTATTTATTTATTGATCAATCTCTCTGCGGGGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATAATAATAAA 2933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                      Figure 1; 433pp;
                                                                                                                                                                  Whyte
Clary
                                                                                                                                                                                                                                            2000WO-US32085
                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                       99US-0167482
                                                                                                                                                                                                                                                                                                                                                                                 sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                              cDNA;
                                                                                                                                                                    ם מ
                                                                                                                                                                              Manning
                                                                                                                                                                                                                                                                                                                                                                                encoding human protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                               2385
                                                                      English.
                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                              G,
                                                                                                                                                                              Sudarsanam
                                                                                                                                                                              s,
                                                                                                                                                                               Martinez
                                                                                                                                                                              77
                                                                                                                                                                                                                                                                                                                                        disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2826
```

```
밁
                           δÃ
                                                            밁
                                                                                       δÃ
                                                                                                                      밁
                                                                                                                                             δõ
                                                                                                                                                                                 밁
                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                          δĀ
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 2259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  disorders (e.g. schlzophrenia), neurodegenerative disorders (e.g. grakinson's disease), inflammatory disorders (e.g. asthma), infectious disease (e.g. http) and reproductive disorders (e.g. asthma), infectious additionally, polynucleotides encoding protein kinases may be used for gene therapy and as DNA probes in diagnostic assays. The protein kinase polypeptides may be used as antigens in the production of antibodies against the protein kinases and in assays to identify modulators of protein kinase expression and activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancers (especially cancers of haematopoietic origin), cardiovascula disease (e.g. atherosclerosis), metabolic disorders (e.g. diabetes), immune related diseases (e.g. rheumatoid arthritis), neurological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2385 BP; 494 A; 768 C; 731 G; 392 T; 0 other;
                                                                                                                                                   824
                                                                                                                                                                                 727
                                                                                                                                                                                                                                           667
                                                                                                                      787
                                                                                                                                                                                                                                                                       704
                                                                                                                                                                                                                                                                                                    607
                                                                                                                                                                                                                                                                                                                                644
                                                                                                                                                                                                                                                                                                                                                             547
                                                                                                                                                                                                                                                                                                                                                                                         584
                                                                                                                                                                                                                                                                                                                                                                                                                      487
                                                                                                                                                                                                                                                                                                                                                                                                                                                  524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404
                                                                                                                                                                                                              764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
               GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGGCCGCCGGGTAGCCATG 1003
                                                                        GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAAACATCCTTGGTACCTA
                                                                                                                                  GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATC
                                                                                                                                                                                           GGGGCTCTGCCCTTTGATGACGACCAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                                                                                                                                                                                   TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG 763
                                                          GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA
                                                                                                                   GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC
                                                                                                                                                                            GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                                                                                                                                                                                                                                              AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAAACCTGCTTTTGGATGAG 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAATATTTG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCCAGATTGTGTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACCTGGTTCTGGAGCACGTCTCGGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75.8%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 2259; DB; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 22; Length 2385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cardiovascular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                      943
                                                                                                                                                                                                        823
 966
                                                            906
                                                                                                                   846
                                                                                                                                               883
                                                                                                                                                                             786
                                                                                                                                                                                                                                                                                                                                                        606
                                                                                                                                                                                                                                                                                                                                                                                      643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

CGTCCGCTTCCAGGTGGAC	GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCC	2024 1987	Db dd
ACAGACCAGCTTCAG            ACAGACCAGCTTCAG	GCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCA	1964 1927	D Q
CAAAGCAGACATCGTC                   CAAAGCAGACATCGTC	CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATC	1904 1867	D . 9
CTCCTTGGACAAAGAAGAA 	TCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTC	1844 1807	D 04
CCAGCTTGACGCCAGAGT                CAGCTTGACGCCAGAGT	CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCC	1784 1747	p 4
CCTGGGCTCCCCTCGCTT 	GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTC	172 <b>4</b> 1687	P 40
CGGCGGTGGCGTCGGG               CGGCGGTGGCGTCGGG	AGTCCCACCGGGACCCCGGGGACACACCACCCCCAGCCCC		B 64
TCTGCACACGCCCCGGGCC	CGGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCC 		р У
ACCCCTGCCCGGCCCCC	GGCGCCGGGAGCAGCCCCCGGCCCCCAGTGCCCGCTCCAC  	் ப	Db VQ
TCGGGGCCCCAGGGGTGG	GGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTC 	4 4	B 8
GGCTGGAGATGAGGCT               GGCTGGAGATGAGGCT	AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGG 	1424 1387	pb dg
GTCCTCCAGCCCTCTAAG              GTCCTCCAGCCCTCTAAG	AGCCAGAGATO AGCCAGAGATO	iu iu	Qу Дъ
3GGCCTTGGAGATGGCCCAG 	GATGCCGGGGTGGTGGCTCCCCTGTACCCACCCGACCGAC	1304 1267	Ф
GGAAGTCCTGAGCATC	CTGAGCCGTCACGGG	1244 1207	Qу
AGCGTGTGGATTCTCCCAT	CAGGACCTGCCTCCCGGAATGATGTTGACCCCCCCCGGAI	1184 1147	Qу
GTATCCCAGCTGTGAG	GAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCC 	1124 1087	Db Qq
CAGTGAGGAGGAGAAC                   CAGTGAGGAGGAGAAC	# GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCG 	106 <b>4</b> 1027	₽ %
AGAGAGCATGGCATCAC	4 CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCT 	100 <b>4</b> 967	D 09

```
ABA02995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2084
                                                              New protein kinase nucleic acid and polypeptide molecules, designated 2246, useful for diagnosing, preventing or treating cancer or a cellular proliferation/differentiation disorders, e.g. carcinoma,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       anti-inflammatory; analgesic; cardiovascular; cancer; sarcoma; cellular proliferation disorder; cellular differentiation disorder; metastatic; haematopoletic disorder; leukaemia; immune disorder; inflammatory disorder; arthritis; autoimmune disease; diabetes mellitus;
                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; protein kinase 2246; cytostatic; immunomodulator; carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABA02995 standard;
                                                    sarcoma or leukaemias
                                                                                                                                                                                                                     25-APR-2000;
                                                                                                                                                                                                                                               25-APR-2001; 2001WO-US13784.
                                                                                                                                                                                                                                                                                                    WO200181588-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                             psoriasis; Crohn's disease; cardiovascular disease;
                                                                                                                                                                                          (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTGA 2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                       2002-049281/06.
DB; AAM47830.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTGA 2422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGGCCGAGGCCCCCCAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                             therapy; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCTACTCCGTCACCTTCACTCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGCTCCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                     2000US-199391P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kinase 2246 coding sequence SEQ
                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
1..2025
                                                                                                                                                                                                                                                                                                                               /product-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA; 2025
                                                                                                                                                                                                                                                                                                                                             D
                                                                                                                                                                                                                                                                                                                               "protein kinase 2246"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2143
```

The invention relates to the human Claim 1; Fig 1; 111pp; English.

protein kinase 2246 gene

the

GGGGCGTGTTCCACATGCCGCACTTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCA

748

```
Š
                                                       밁
                                                                                      δÃ
                                                                                                                                     밁
                                                                                                                                                                         δÃ
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                    ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 1477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          disorder includes carcinoma, sarcoma, metastatic or haematopoietic disorders (e.g. leukaemias) or cancers of the lung, breast, thyroid, he neck, prostate or genito-urinary tract. The 2246 nucleic acid and polypeptide are also useful for treating immune disorders, e.g. inflammatory (e.g. respiratory inflammation or arthritis), autoimmune disease (e.g. diabetes mellitus, psoriasis, Wegener's granulomatosis, Crohn's disease or Grave's disease), for treating cardiovascular diseases, endothelial cell disorder, viral diseases or pain. The nuclei acid and polypeptide are also useful for evaluating the efficacy of a treatment of cancer or a cellular prolliferation and/or differentiation disorder. The nucleic acid is useful for gene therapy. The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the isolated encoded polypeptide with cytostatic, immunomodulator, anti-inflammatory, analyssic and cardiovascular activity. The 2246 nucleic acid and polypeptide are useful for diagnosing, preventing or treating a subject having cancer or a cellular proliferation and/or differentiation disorder or at risk of developing cancer or a cellular proliferation and/or differentiation disorder. In particular, the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2025 BP; 442 A; 641 C; 616 G; 326 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence is that of the 2246 coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                219
              819
                                                                                             759
                                                                                                                                     569
                                                                                                                                                                                                                   509
                                                                                                                                                                                                                                                         639
                                                                                                                                                                                                                                                                                                  449
                                                                                                                                                                                                                                                                                                                                          579
                                                                                                                                                                                                                                                                                                                                                                                389
                                                                                                                                                                                                                                                                                                                                                                                                                        519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAAGGACAGA 218
GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCCTCCTGAGGGGAA 878
                                                                                                                                                          AAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC
                                                                                                                                                                                                                                    GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                       ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCCGAGAACCTGCTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGAATGAAGGTGGAGCGGGAGATCGCCATCC 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGTCTGGTGAAGCTGGGGGTTCACTGCCGTCACCTGCCAGAAGGTGGCCATCAAGATCG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCAGCACGCGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGGCAGA
                                                    TGGTGGGGGGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGC
                                                                                             TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC
                                                                                                                                     AGAAGTATGACGGCCGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGC
                                                                                                                                                                                                                   GCCTGTTGGAGACCAGCTGTGGGTCCCCCCCACTACGCCCTGCCCCGAGGTGATCCGGGGGG
                                                                                                                                                                                                                                                                                                  ACGAGAAGAACAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACA
                                                                                                                                                                                                                                                                                                                                        ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA
                                                                                                                                                                                                                                                                                                                                                                                ACTTCTGCCACAGCCACTATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAAACAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32.2%;
70.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 961; DB 24
Pred. No. 1e-178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         435; Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  thyroid, head
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                         698
                                                                                                                                                                                                                                                                                                  508
                                                                                                                                                                                                                                                                                                                                        638
                                                                                                                                                                                                                                                                                                                                                                                                                      578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                    688
                                                                                             818
                                                                                                                                     628
                                                                                                                                                                                                                 568
                                                                                                                                                                                                                                                                                                                                                                              448
                                                                                                                                                                                                                                                                                                                                                                                                                                                            388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             268
```

δ 밁 Š 밁

1119

923

1059

863

Q В δÃ B Š

> 809 939 749

문

983

1103 1239 1043 1179

2138

```
1959 TCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCA
                                                             AAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCG
                                                                                                                                                                                                                                                                           GGGGAGCCGCCTGGAGGACTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTTCCCCTC 1778
                                                                                                                                                 AGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAG
                                                                                                                                                                                   GCTTCCACCGCCGGAAACTGCAAGTTCCGACGCCGGAGGAGGTGTCCAACCTGACACCAG
                                                                                                                                                                                                                       GCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG
                                                                                                                                                                                                                                                          GAGGGGTGCCCTGGAGGGCGCGCGCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCCTGGAGATGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCCACCCGACGGGCCTTGGAGATGGCCC 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCAAGAAAAGATGATATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG 1178
                                       AGGAGCAGATCTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCG
                                                                                                              AGTCGTCCCCAGAGCTGGCGAAGAAGTCCTGGTTTGGGAACTTCATCAGCCTGGAGAAGG
                                                                                                                                                                                                                                                                                                                               AGGAGAGCCCGGCTGGCACGCCCAACCCCCACGCCCCGTCCAGCCCC-----AGCGTCG
                                                                                                                                                                                                                                                                                                                                                                 CCCCAGGCTCCCCGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGG 1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGCAGCCCCG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCACGGCCAGAGGTCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTTCCACCAGCCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGATGCTGAACCGGCACGGCAAGCGGCGGCCAGAACGCAAATCCATGGAGGTGCTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATCCGCTCGCTGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGGGGGCCCCGGGAGCAGCCCCCCCCCCCAGTGCCCGCCTCCACACCCCTGCCCGGCC 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGACCAGGACCTGCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACTGGGCTGCTTCCGAGACCGCAACAAGCTGCTGCAGGACCTGCTGTCCGAGGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCAT 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATATAGGGGGCAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATCGAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGCGAGGTGGACGCCGCACGCCTCACGCTAGAGCACATTCAGAAACACATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -GGACGGCGGCTCCCCGGTGCCTGCGCGGCCGGCCATTGAGATGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                     -----ACCCCCAAGGGGACACCTGTCCACACGCCAA 1357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .......
     2018
                                                                                                                                                                                   1531
                                                                                                              1591
                                                                                                                                                1898
                                                                                                                                                                                                                                                        1471
                                                                                                                                                                                                                                                                                                                             1411
                                         1651
                                                                                                                                                                                                                       1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        938
   RESULT 4
ABA02994
ID ABA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                    Claim 1; Fig 1; 111pp; English.
                                                                                                      New protein kinase nucleic acid and polypeptide molecules, designated 2246, useful for diagnosing, preventing or treating cancer or a cellular proliferation/differentiation disorders, e.g. carcinoma,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; protein kinase 2246; cytostatic; immunomodulator; carcinoma; anti-inflammatory; analgesic; cardiovascular; cancer; sarcoma; cellular proliferation disorder; cellular differentiation disorder; metastatic; haematopoietic disorder; leukaemia; immune disorder; inflammatory disorder; arthritis; autoimmune disease; diabetes mellitus; certante.
                                                                                           sarcoma or leukaemias
                                                                                                                                                                                 P-PSDB; AAM47830.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2019
                                                                                                                                                                                                    WPI; 2002-049281/06
                                                                                                                                                                                                                                       Meyers
                                                                                                                                                                                                                                                                                                           25-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human protein kinase 2246 encoding cDNA SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1814
                                                                                                                                                                                                                                                                       (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                              25-APR-2001; 2001WO-US13784.
                                                                                                                                                                                                                                                                                                                                                                                                                     WO200181588-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 psoriasis; Crohn's disease; cardiovascular disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABA02994 standard; cDNA; 2217
invention is isolated e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAG 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGGCATCTACTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGG 1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGG 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCAGA 2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGATATCACCTACACGGAGGGT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGACATCAGCTCCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG
                                                                                                                                                                                                                                       <u>بح</u>
relates to the human protein kinase 2246 encoded polypeptide with cytostatic, immur
                                                                                                                                                                                                                                                                                                             2000US-199391P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                relates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
51..2075
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                     "protein kinase 2246"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----GGGGAGGCGCAGAAGGAGA 1813
```

virus;

1539

1419 1214 1359

Ş 밁 δ 밁 δÃ 밁 Q 밁 δ 맑 Ş 밁 Qy 밁 δÃ 밁 Qy 밁 Qy 밁 δ 밁 Š 밁 δ В Š

immunomodulator,

gene

and the

1592

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         88888888888888888888888
  밁
                                     Ş
                                                                               밁
                                                                                                              Qy
                                                                                                                                                            문
                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity Matches 1477; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disorder includes carcinoma, sarcoma, metastatic or haematopoietic disorders (e.g. leukaemias) or cancers of the lung, breast, thyroid, he neck, prostate or genito-urinary tract. The 2246 nucleic acid and polypeptide are also useful for treating immune disorders, e.g. inflammatory (e.g. respiratory inflammation or arthritis), autoimmune disease (e.g. diabetes mellitus, psoriasis, Wegener's granulomatosis, Crohn's disease or Grave's disease), for treating cardiovascular diseases, endothelial cell disorder, viral diseases or pain. The nuclei acid and polypeptide are also useful for evaluating the efficacy of a treatment of cancer or a cellular prollferation and/or differentiation disorder. The nuclei acid is useful for gene therapy. The present sequence is that of the 2246 encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  anti-inflammatory, analgesic and cardiovascular activity. The 2246 nucleic acid and polypeptide are useful for diagnosing, preventing or treating a subject having cancer or a cellular proliferation and/or differentiation disorder or at risk of developing cancer or a cellular proliferation and/or differentiation disorder. In particular, the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   159
    739
                                                                                                                       759
                                                                                                                                                               619
                                                                                                                                                                                                    699
                                                                                                                                                                                                                                            559
                                                                                                                                                                                                                                                                                    639
                                                                                                                                                                                                                                                                                                                            499
                                                                                                                                                                                                                                                                                                                                                                                                       439
                                                                                                                                                                                                                                                                                                                                                                                                                                               519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTCTGGTGAAGCTGGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAACCGGGAGAAGCTGTCGGAGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC
                    GGGGCGTCTTCCACATGCCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA 878
                                                                                                                                                                                                                                                                 GCCTCCTGGAGACCAGCTGCGGGTCCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG
                                                                                                                                                                                                                                                                                                                                          ATGAGAAAACAACATCCGCATTGCAGACTTCGGCATGGGGTCCCTGCAGGTGGGGGACA
                                                                                                                                                                                                                                                                                                                                                                                                       ACTTCTGCCACAGCCACTCCATATGCCACAGGATCTGAAAACCTGAAAACCTCCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGG 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC
                                                                               TGGTGGGGGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGC
                                                                                                                     TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC
                                                                                                                                                               AGAAGTATGACGGCCGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGC
                                                                                                                                                                                                  AAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC
                                                                                                                                                                                                                                          GCCTGTTGGAGACCAGCTGTGGGTCCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGG
                                                                                                                                                                                                                                                                                                                         ACGAGAAGAACAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAACAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2217 BP; 476 A; 715 C; 682 G; 344 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 961; DB 24; Length 2217;
Pred. No. 1.1e-178;
0; Mismatches 435; Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 thyroid, head
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The nucleic
. 798
                                                                                                                                                                                                                                                                                  698
                                                                                                                                                                                                                                                                                                                                                               638
                                                                                                                                                                                                                                                                                                                                                                                                       498
                                                                                                                                                                                                                                                                                                                                                                                                                                               578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198
                                                                               738
                                                                                                                     818
                                                                                                                                                            678
                                                                                                                                                                                                                                          618
                                                                                                                                                                                                                                                                                                                            558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
```

Ş 밁 δã 밁 δ

δÃ

Š

879

TGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938

Ş 밁 Ş

```
В
                                                                                                                                                          ρy
                                                                                                                                                                                               밁
                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1033
                                                                                                                                                                                                                                                                      1462
                                                                                                                                                                                                                                                                                                                                           1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1059
                                                                                                                                                                                                                                                                                                                                                                            1659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  799
                                                                                                                       AGCACGGCCAGAGGTCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTCCACCAGCCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCATGCTGAGCCGTCACGGGAAGCGGCACCAGAGCGGAAGTCCATGGAAGTCCTGAGCA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGCTGAGGAGGAGAGA 111E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATCCGCTCGCTGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGCGAGGTGGACGCCGCACGCCTCACGCTAGAGCACATTCAGAAACACATATGGT
              TCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCA
                                                     AGGAGCAGATCTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAGCAGCCCCCG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGACCAGGACCTGCCTCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACTGGGCTGCTTCCGAGACCGCAACAACCTGCTGCAGGACCTGCTGCTCCGAGGAGGAGG 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCCGACGTCCTAGAGAGCATGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATATAGGGGGCAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGC
                                                                        AAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCG
                                                                                                                                                                                               GCTTCCACCGCCGGAAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAG
                                                                                                                                                                                                                               GCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG
                                                                                                                                                                                                                                                                    GAGGGGTGCCCTGGAGGGCGCGCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCC
                                                                                                                                                                                                                                                                                                       GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC 1778
                                                                                                                                                                                                                                                                                                                                           AGGAGAGCCCGGCTGGCACGCCCAACCCCACGCCCCGTCCAGCCCC-----AGCGTCG
                                                                                                                                                                                                                                                                                                                                                                          CCCCAGGCTCCCCGCGCTCTTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGGGGCGCCGGGAGCAGCCCCCCGCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCGAGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGG 1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGGCTGGAGATGAGG 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCACCGATGCCGGGGGTGGTCCCCTGTACCCCACCCGACGGCCTTGGAGATGGCCC 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGATGCTGAACCGGCACGGCAAGCGGCGGCCAGAACGCAAATCCATGGAGGTGCTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGATGAGGACCTGCCCCCCGGAACGAGATAGACCCTCCCCGGAAGCGTGTGGACTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -GGACGGCGGCTCCCCGGTGCCTGCGCGGCGGGCCATTGAGATGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                            -----ACCCCCAAGGGGACACCTGTCCACACGCCAA 1407
=
=
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1058
                                                                                                                                                                                               1581
                                                                                                                                                                                                                                 1838
                                                                                                                                                                                                                                                                    1521
                                                                                                                                                                                                                                                                                                                                           1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  858
```

```
RESULT 5
AAD34315
ID AAD3
XX Humma
XX Humma
XX Humma
XX Home
XX AAD3
XX Home
XX AAD3
XX Home
XX AAD3
XX Home
X
                                                                                                                                                                                                                                                                                                                                                                                              31-AUG-2000;

08-SEP-2000;

14-SEP-2000;

22-SEP-2000;

29-SEP-2000;

06-OCT-2000;

13-OCT-2000;
                                                                 WPI; 2002-329769/36
                                                                                                                                                                                                                                                  Gururajan
                                                                                                                                                                                                                                                                           Bandman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; kinase; enzyme; PKIN-18 protein; immune system disorder; anaemia; acquired immune deficiency syndrome; thymic hypoplasia; Crohn's disease; asthma; neurological disorder; epidepsy; Charcot-Marie-Tooth disease; all proliferative disorder; cancer; adenocarcinoma; leukaemia; lymphoma; melanoma; myeloma; sarcoma; developmental disorder; bown's syndrome; gene therapy; protein therapy; cytostatic; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200218557-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human PKIN-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD34315 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGGCATCTACTCCGTCACCCTTCACCCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCAGCACT 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGG
                                                                                                                                                                                                                                                              Ó
                                                                                                                                                                                                                                                                                                                                      INCYTE GENOMICS INC.
                                                                                                                                                                                                                                        R,
                                                                                                                                                                                                                                                                    Nguyen DB,
                                                                                                                                                                                                                                                                                                                                                                                                                   ; 2000US-229873P.
; 2000US-231257P.
; 2000US-232654P.
; 2000US-234902P.
; 2000US-236499P.
; 2000US-238389P.
                                                                                                                                                                                    Burrill
                                                                                                                                                                                                         Elliott VS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001WO-US27219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                     Warren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA
                                                                                                                                                                                                                                        Ding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1..1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                        ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA;
                                                                                                                                                                                                                                     Patterson C,
                                                                                                                                                                                                                                                                           Walia NK,
                                                                                                                                              Lu Y, Iso
Marcus GA,
Kearney L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Human PKIN-18 protein"
                                                                                                                                                                                                             Ison CH,
                                                                                                                                                                                                                                                                 Hafalia AJA,
                                                                                                                                                                                                                                     Yue H,
                                                                                                                                              Zingler KA,
Policky JL,
                                                                                                                                              Au-Young J, Tang
er KA, Lu DAM, La
ky JL, Thangavelu
                                                                                                                                                     AJA, Yao MG, om...
Baughn MR, Tribouley of the state of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2078
                                                                 ٠.
                                                                                õ
                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρ
                                                                                                                                              뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
```

P-PSDB;

밁

CCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCAC

CCCTTCGACGATGACAACTTGCGACAGCTGCTGCAGAAGGTGAAGCGGGGGGGTGTTCCAC

CGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTGGGGGCTCTG

CGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGCTGGTGGGGGCTCTG

AGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGC

AGCTGTGGGTCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGGAGAAGTATGACGGC

570 712 510

772

ATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAG

892

690

832 630

ATGCCGCACTTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCATGATCGAGGTGGAC

511

451

391

450

592

652

TACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAAC

ATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACC

ATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACAGCCTGTTGGAGACC

New human kinases, useful for diagnosing, treating or preventing immune system disorders (e.g. Crohn's disease), neurological disorders (e.g. epilepsy), or cell proliferative disorders (e.g. cancers such as or lymphoma)

Claim 97; Page 212-213; 218pp; English

Query Match Best Local S Matches 1473 The present invention relates to human kinases (PKIN) and polynucleotides encoding such proteins. PKIN sequences of the invention are useful for diagnosing, treating or preventing disorders associated with aberrant expression of PKIN, particularly immune system disorders (e.g. acquired immune deficiency syndrome (AIDS), thymic hypoplasia, Crohn's disease, anaemia, asthma), neurological disorders (e.g. epilepsy, Charcot-Marie-Tooth disease or seizures), cell proliferative disorders (e.g. cancers such as adenocarcinoma, leukaemia, lymphoma, melanoma, myeloma, sarcoma), and developmental disorders (e.g. Down's syndrome). They are also used in gene therapy and protein therapy. The present sequence is a cDNA encoding human PKIN-18 protein. Sequence 2647 BP; 525 A; 885 C; 32.1%; 789 <u>ი</u> 448 T; 0 other; Length 2647;

Ş

밁

Q В

밁

밁 Qy 뮵 Š 밁

1702

TGCACGCCTTCCTGTCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCAAACGAGCTTCC

ő

Conservative <u>.</u> Score 955.8; DB 24; pred. No. 1.2e-177; 0; Mismatches 437; Indels Gaps 6;

331 353 151 211 91 31 CACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTT cal Similarity 1473; Conserv CCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGC CTAGAACACGTGTCAGGTGAGCTCTTCGACTACCTGGTGAAGAAGGGGAGGCTGACG CTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACG CTGTCGGAGTCCGGTGCTGATGAAGGTGGAGCGGGAGATCCCCATCCTGAAGCTCATCGAA 352 CTGGGGGTTCACTGCCACCTGCCAGAAGGTGGCCATCAAGATCGTCAACCGTGAGAAG CTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAG 292 CACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAAACAAAAATATTTGTACCTGGTG CTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCCTGAAGCTCATTGAG 90 472 412 150 532 390 330 270 210

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                      õ
                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
 S
                                     밁
                                                                    õ
                                                                                                        문
                                                                                                                                                                          밁
                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1045
     1973
                                                                                                                                                                            1474
                                                                                                                                                                                                                                               1414
                                                                                                                                                                                                                                                                                                                                                    1673
                                                                                                                                                                                                                                                                                                                                                                                                                      1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            751
TCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCCGAGTACAAG
                                                                                                                                                                                            AAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGCAGCCCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACCGATGCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCCCCGGAACGAGATAGACCCTCCCGGAAGCGTGTGGACTCCCCGGATGCTGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTG
                                                                                                                                      CTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTC
                                                                                                                                                                         AAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAGAGTCGTCCCCAGAG
                                                                                                                                                                                                                                                                                                                GGCACGCCCAACCCCACGCCCCGTCCAGCCCC-----AGCGTCGGAGGGGTGCCCTGG
                                                                                                                                                                                                                                                                                                                                                  CGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCACC 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACCCCTCACCCTCACCAAGGGGCAGTCCCCCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGCAGCCCCCCCCCCCAGTGCCCGCTCCACACCCCCTGCCCGGCCCCCCAGGCTCCCCG 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGGGTGGGGGCCCCGGG 1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTCCGGTCTTTTCCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACGGCGGCTCCCCGGTGCCTGCGCGGCGGCCATTGAGATGGCCCAGCACGCCAGAGG 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCACAGCCAGAGA 1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACGGCAAGCGGCCAGAACGCAAATCCATGGAGGTGCTCAGCGTGAC------G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCCCGGAATGATGTTGACCCCCCCCGGAAGCGTGTGGATTCTCCCCATGCTGAGCCGT 1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTTACTTCCTCCTGGACCGGAAAGAAAGGTACCCGAGCCAGGAGGATGAGGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGACCGCAACAAGCTGCTGCAGGACCTGCTGTCCGAGGAGGAGAACCAGGAGAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGGACCGCGAGGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGGCTAGCCATGCGGAGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGAAA 952
                                   GTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCGTGCACGCCTTCCTG
                                                                                                      CTGGCGAAGAAGTCCTGGTTTGGGAACTTCATCAGCCTGGAGAAGGAGGAGCAGATCTTC
                                                                                                                                                                                                                                           AGGGCGCGCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCCGCTTCCACCGCCGG
                                                                                                                                                                                                                                                             AGGAGTCGTCTCAACTCCGTCGCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGCGC 1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTCCACCAGCCACTCAGCAGCC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGCAGATCCGCTCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCGCACGCCCCCCACGCTAGAGCACATTCAGAAACACATATGGTATATAGGGGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                    ACCCCCAAGGGGACACCTGTCCACACGCCAAAGGAGAGCCCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -CCCGGGT 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1072
                                                                                                      1593
                                                                                                                                                                         1533
                                                                                                                                                                                                                                           1473
                                                                                                                                                                                                                                                                                                                1413
                                                                                                                                                                                                                                                                                                                                                1732
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1012
                                   1653
                                                                                                                                                                                                           1852
                                                                                                                                                                                                                                                                                                                                                                                    1359
                                                                      1972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        864
```

```
RESULT 6
ABA08296
ID ABA0
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                haematopolesis regulation; tissue growth; immunomodulator; activin; inhibin; chemotaxis; chemokinesis; thrombolysis; oncogenesis; proliferation; metastasis; cancer; tumour; haematopoletic disorder; myeloid cell disorder; lymphoid cell disorder; asthma; arthritis; chronic inflammatory condition; proliferative retinopathy; atherosclerosis; coronary heart disease; arterial ischaemia; bone disorder; osteoporosis; vascular growth disorder; tissue regeneration; wound healing; infection; immune disorder; cell culture; drug screening; gene therapy; antiinflammatory; antiasthmatic; antiarthritic; haemostatic; antiarteriosclerotic; cytostatic; osteopathic; vascutopic; cardiant; virucide; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1654
                                                                           Human proteins and DNA encoding sequences useful for preventing, treating or ameliorating a medical condition in a mammalian subject
                                                                                                                                                                                                                                         03-FEB-2000; 2000US-0496914.
27-APR-2000; 2000US-0560875.
                            Claim 1; Page 364-365; 1963pp; English
                                                                                                                                                                                                                                                                                        05-FEB-2001; 2001WO-US03800.
                                                                                                                                                                                                                                                                                                                                                                                                                      antifungal; vulnerary; antiulcer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; cytokine; cell proliferation; cell differentiation; growth factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-JAN-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABA08296 standard; cDNA; 906
                                                                                                                             P-PSDB; ABB11052
                                                                                                                                                                                                           (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human HrPOPK-1 homologue-encoding cDNA, SEQ ID NO:72.
                                                                                                                                                                            YT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACGG 2277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGGTGGTGGAGACCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-457740/49.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCCCAGCTGCTGAGCACACGACCCGCCTGCGGCCCAGCACTTGTCAGACACCACT 1935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGGAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGCATCTACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCACGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGGTTGATATCACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTG 1940
                                                                                                                                                                           Liu C,
                                                                                                                                                                            Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --GGGGAGGCGCAGAAGGAGAACGGCATCTACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2092
```

ABB10981-ABB12330 represent 1350

novel

human

polypeptides, and

```
CC thrombolytic activities; receptor or ligand activities; or may be continued in oncogenesis, cancer cell proliferation or metastasis.

CC Depending on their blological activities, polypeptides and nucleotides of the invention are useful for preventing, treating or ameliorating medical cc conditions, e.g., by protein or gene therapy. Such conditions include cc cancers, haematopoietic disorders (e.g., myeloid or lymphoid cell cc disorders), chronic inflammatory conditions (e.g., asthma or arthritis), cc proliferative retinopathy, atherosclerosis, coronary heart disease, cc arterial ischaemia, bone disorders (e.g., osteoporosis), and abnormal cc vascular growth. Polypeptides involved with tissue regeneration and crepair (or nucleic acids encoding them) may be used to promote wound healing (e.g., of burns, incisions and ulcers), while those with cc immunomodulatory activities may be used in the treatment of viral, cc polypeptides with growth factor activity may be used in cell cultures to promote cell growth. For example, such polypeptides may be used to comanipulate stem cells in culture to give rise to neuroepithelial cells that can be used to augment or replace cells damaged by illness, and in drug also be used in the diagnosis of the above conditions, and in drug any also be used in the diagnosis of the above conditions, and in drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequences ABA0825-ABA09574 represent nucleic acids encoding them. The invention also relates to vectors and recombinant host cells comprising a nucleotide of the invention, methods of producing the novel polypeptides, antibodies against the polypeptides, methods of detecting the nucleotides or polypeptides in a sample, and methods of identifying compounds which bind to polypeptides of the invention. Although novel, many of the polypeptides of the invention have homology to known proteins, thereby
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   haematopoiesis regulatory activity; tissue growth activity; immunomodulatory activity; activin- or inhibin-related activities; chemotactic or chemokinetic activities; haemostatic, thrombotic or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    giving an insight into their probable biological activities, and hence potential therapeutic applications. The polypeptides of the invention may have various activities, including cytokine, cell proliferation or cell differentiation activities; stem cell growth factor activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 906 BP; 205 A; 253 C; 267 G; 181 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         screening techniques. The present sequence novel human polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          164 CACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGAGACAGGG 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
GGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTC
                                                                                                                         GCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCAA
                                                                                                                                                                                                           GCTGTCTGCCCGGCGCTCATGGGACCTGCTCTCAGGCTTTCCCAGGTACCTGGTTCTGGA
                                                                                                                                                                                                                                                                                                                        TCCCCCGGATGAACTGACATCAGGTCCGTCGATGCTGGCGCAGGTTTCACCACACGGGAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCT-GAA 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTT 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTCGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22.1%;
87.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence represents a cDNA encoding a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 658.8; DB 22; Length 906; Pred. No. 1.3e-119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                              ----GTACCTGGTTCTGGA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                       420
                                                                                                                                                 477
                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                    402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        : :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 7
ABA08924
ID ABA0
XX
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    βÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            haematopoiesis regulation; tissue growth; immunomodulator; activin; inhibin; chemotaxis; chemokinesis; thrombolysis; oncogenesis; proliferation; metastasis; cancer; tumour; haematopoietic disorder; proliferation; metastasis; cancer; tumour; haematopoietic disorder; myeloid cell disorder; lymphoid cell disorder; asthma; arthritis; chronic inflammatory condition; proliferative retinopathy; atherosclerosis; coronary heart disease; arterial ischaemia; bone disorder; osteoporosis; vascular growth disorder; tissue regeneration; wound healing; infection; immune disorder; cell culture; drug screening; gene therapy; antiinflammatory; antiasthmatic; antiarthritic; haemostatic; antiarteriosclerotic;
                              WPI; 2001-457740/49
P-PSDB; ABB11680.
                                                                                                                                                                                                                                   03-FEB-2000;
27-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human Ser/Thr kinase homologue-encoding cDNA,
                                                                                                                Tang
                                                                                                                                                                                                                                                                                                                        05-FEB-2001; 2001WO-US03800.
                                                                                                                                                                                                                                                                                                                                                                                    09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antifungal; vulnerary; antiulcer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; cytokine; cell proliferation; cell differentiation; growth factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-JAN-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABA08924 standard; cDNA; 614 BP
                                                                                                                                                                            (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           538
                                                                                                                   YŦ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAA 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGCCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAAATATGATGGCCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAA 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGCCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCTG
                                                                                                                Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      osteopathic; vasotropic; cardiant; virucide; antibacterial;
                                                                                                                                                                                                                                   2000US-0496914.
2000US-0560875.
                                                                                                                   Drmanac
```

SEQ ID NO:700

δÃ

Query Match Matches

밁 δÃ 밁

224 61

181 343 121 284 Š 밁 δõ 밁 δõ 밁 õ 밁 õ В Qy

478

418 301 403 241

720 777

780

717

660

```
CC haematopolesis regulatory activity; tissue growth activity; chamunomodulatory activity; activity; inhibin-related activities; chamunomodulatory activity; activities; haemostatic, thrombotic or chemotactic of chemotactic or chemotactic or chemotactic or chemotactic or chemotactic of chemotactic or chemo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             giving an insight into their probable biological activities, and hence potential therapeutic applications. The polypeptides of the invention may have various activities, including cytokine, cell proliferation or cell differentiation activities; stem cell growth factor activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or polypeptides in a sample, and methods of identifying compounds which bind to polypeptides of the invention. Although novel, many of the polypeptides of the invention have homology to known proteins, thereby
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequences ABB10981-ABB12330 represent 1350 novel human polypeptides, and sequences ABA0825-ABA09574 represent nucleic acids encoding them. The invention also relates to vectors and recombinant host cells comprising a nucleotide of the invention, methods of producing the novel polypeptides, antibodies against the polypeptides, methods of detecting the nucleotides antibodies against the polypeptides, methods of detecting the nucleotides.
2103
                                                                                                                                                                                                                                                                                                                                                                                         1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1803 TCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAAC 1862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 614 BP; 128 A; 226 C; 161 G; 99 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human proteins and DNA encoding sequences useful for preventing, treating or ameliorating a medical condition in a mammalian subject
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                screening techniques.
                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAA 1922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      arthritis
CAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCA 2162
                                                                                                                                                                                                                                                                                  GCCTGAGTCACAGTGTGCTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCA 1982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAAC, 60
                                                                                                                                           GCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTC
                                                                                                  GCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1; Page 648; 1963pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence represents a cDNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 614; DB 22; Length 614; Pred. No. 6.7e-111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                         2042
                                                                                                                                                                                          2102
                                                                                                                                                                                                                                                                                            240
```

Ş

밁 Ş 밁 Ş

밁 Ş 밁 á 밁

밁

301

CAGAGCCCTCCCCGCGACGGGACGCCGAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCA

360

component selected from the polynucleotides, proteins,

antibodies,

```
ŽQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
ABK70216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
The invention relates to an isolated polynucleotide comprising a sequence selected from 183 human DNA sequences (appearing as ABK70130-ABK70312), or their fragments, homologues, variants or complements and their encoded polypeptides. Also included are an expression vector comprising the polynucleotide operably linked to an expression vector of; an isolated antibody, or its antigen-binding fragment that specifically binds to the polypeptide; a method for detecting the presence of a cancer in a patient; a fusion protein comprising at least the polypeptide; an isolated antiponucleotide that hybridises to the polynucleotide under moderately stringent conditions; a method for stimulating and/or expanding T cells specific for a tumour protein; an isolated T cell population comprising T cells prepared from the method of above; a composition comprising a first component consisting of carriers and immunostimulants, and a second
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-SEP-2000; 2000US-234837P.
10-OCT-2000; 2000US-239440P.
29-JUN-2001; 2001US-301928P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2163
                                                                                                                                                                                                                                                                                        Claim 1; Page 132-133; 189pp; English.
                                                                                                                                                                                                                                                                                                                                               New tumour lung proteins and nucleic acids encoding the proteins, useful as vaccines and for treating, preventing, diagnosing or monitoring lung
                                                                                                                                                                                                                                                                                                                                                                                                                                      Benson DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-SEP-2001; 2001WO-US42232.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAR-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200224057-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; ss; gene; lung cancer; cytostatic; tumour; vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human lung cancer associated cDNA SEQ ID 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABK70216 standard; cDNA; 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGC 2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGAGCTGAGCAGCTCTCCCCGGCGAGGCCCCCCCAAGGACAAGAAGCTCCTGGCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGGGACCCCTCTG 2416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGAGCTGAGCAGCTCTCCCCGCCGAGGCCCCCCAAGGACAAGAAGCTCCTGGCCACCA 2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGACCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCCCACCCGGCCGAGACC 2342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTGAGCACTCATGACCAGCCCTCCGTGCCAGGCCCTGGCAGACGAGAAGAACGGGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCC 2282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGGGACCCCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mohamath R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             614
                                                                                                                                                                                                                                                                                                                                             treating, preventing, diagnosing
                                                                                                                                                                                                                                                                                                                                                                                                                                        Lodes MJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
```

```
ABL10489
ID ABL1
XX
AC ABL1
XX
DT 26-W
XX
DE Dros
XX
KW Dros
KW Phaz
XX
OS Dros
XX
                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202020202020202020
202020202020202020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteins, T cell populations and antigen presenting cells expressing the polypeptide; methods for stimulating an immune response or treating cancer in a patient by administering the composition and diagnostic kits comprising at least one of the oligonucleotide of, or an antibody and a detection reagent consisting of a reporter group. The polypeptides and polynucleotides are useful as vaccines for the treatment or prevention of lung cancer, and for diagnosis and monitoring of such cancer. The polynucleotide, polypeptide and antigen presenting cells can be used to stimulate or expand T cells specific for a tumorous protein. The polynucleotides may be used as probes of ribozyme molecules for inhibiting expression of tumour polypeptides and proteins in tumour cells. The present sequence is one of the 183 lung cancer associated
                  Drosophila melanogaster
                                                                                             Drosophila melanogaster expressed polynucleotide SEQ ID NO 25949.
                                                 pharmaceutical; gene; ss.
                                                                  Drosophila;
                                                                                                                                 26-MAR-2002 (first entry)
                                                                                                                                                                                                  ABL10489 standard;
                                                                                                                                                                                                                                                                                                                                                                                   1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 512 BP; 108 A; 149 C; 166 G; 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polynucleotides.
                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                  964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      604 AGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTC 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          724 CATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGGTGGGGGGCTCTGCCCTTTGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           664 CCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGA 723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
                                                                                                                                                                                                                                                                                AGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTTCAGGGACCGCGA 108:
                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATCCGGAGCCTGCCATCCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCCGAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       512;
                                                                                                                                                                                                                                                                                                                                               AGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                CCCGTGCCTGGAGCCAGCCCTGGCCGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCCTTTGATGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             developmental biology; cell signalling; insecticide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                  CDNA; 2720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17.2%; Score 512; DE 100.0%; Pred. No. 6.1 tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6.1e-91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 24; Length 512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                             1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
밁
    Š
                                 밁
                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                              δÃ
                                                                                                                       Qy
                                                                                                                                                       밁
                                                                                                                                                                                    Š
                                                                                                                                                                                                                    뭕
                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                        γ
                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 692;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL016176-ABI30511), expressed DNA sequences (ABL016175) and the encoded proteins (ABB07737-ABB72072).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2720 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; SEQ ID NO 25949; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated nucleic acid detection reagent for detecting genes from Drosophila and for elucidating cell signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; ABB66386.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                   449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200171042-A2
                                                                                               389
                                                                                                                                                                                       462
                                                                                                                                                                                                                                                  402
                                                                                                                                                                                                                                                                                                                                             149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (PEKE ) PE CORP NY.
                                                                                                                                                                                                                     269
                                                                                                                                                                                                                                                                                                               342
                                                                                                                                                                                                                                                                                209
                                                                                                                                                                                                                                                                                                                                                                                                                                     222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29
                                               AGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCC
TCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAA
                                                                                                                                                                               GGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACT
                                                                                                                                                                                                                                                                                                       AGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                              GGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGA 281
                              TCTGCCACTCGCATTCGATTTGCCATCGCGACTTGAAGCCGGAGAATCTGCTGCTGGACG
                                                                                                                      TCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATG
                                                                                                                                                     GTCGATTGACGCCGAAGGAGGCGCCAAGTTCTTCAGGCAAATCATCTCCGCCCTGGATT
                                                                                                                                                                                                               TGTATTTGATATTGGAGCATGTATCCGGCGGAGAGCTCTTCGATTACCTGGTGAAGAAGG
                                                                                                                                                                                                                                TGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGG
                                                                                                                                                                                                                                                                           AACTAATCGATCATCCACACGTCCTTGGCCTGAGCGATGTGTACGAGAACAAGAAGTATT
                                                                                                                                                                                                                                                                                                                                                      ACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGA 341
                                                                                                                                                                                                                                                                                                                                        ATCGCGAGAAACTCAGCGAATCGGTGCTAATGAAGGTTGAACGTGAAATCGCCATAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAATTGCCAATTTGTGGGGCCCTATCGCCTGGAGAAAACCCCTTGGCAAGGGTCAAACGG 88
                                                                                                                                                                                                                                                                                                                                                                                                  GTCTCGTCAAGTTGGGCGTGCATTGTGTGATTGGCAAGAAGGTTGCGATTAAAATAATCA 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    relates to an isolated nucleic acid detection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661 A; 715 C; 759 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ľ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 470.8; DB 2
Pred. No. 1.1e-82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      585 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           347; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1000 or more
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    reagent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                          401
                                                           641
                                                                                                                                                                                  521
                                                                                                                                                                                                                                             461
                                                                                                                                                                                                                                                                                                                                        208
                              508
                                                                                         448
                                                                                                                       581
                                                                                                                                                                                                               328
                                                                                                                                                                                                                                                                           268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WIPO
```

۲

is

```
RESULT 10
AAK94923
ID AAK94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
     PTY DRAW TO A CONTRACT OF THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1062
                                                                                                                                                                                                                                                                          08-JUL-1999; 99JP-0194486.
11-JAN-2000; 2000JP-0118774.
02-MAY-2000; 2000JP-0183765.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; full length cDNA; cDNA synthesis; oligo-capping;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human full-length cDNA, SEQ ID NO: 4157.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-NOV-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAK94923 standard; cDNA; 2954
830 Primers useful for synthesizing full length cDNA clones and their
                                                                                                                                                                                                                                                                                                                                                                                       07-JUL-2000; 2000EP-0114089
                                                                                                                                                                                                                                                                                                                                                                                                                                          05-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP1130094-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                   Wakamatsu A,
                                                                                                                                                                                                                      (HELI-) HELIX RES INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    629
                                                   P-PSDB; AAM93956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGGCTGCTTCAGGGACCGCGAGAGCTGCATCGCGAGCTGAGGAGGAGGAGAACC 112:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGAAAAGATGATATTTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGTCTTCCACATGCCCCCACTTCATTCCTCCAGATTGCCCAGAGCCTCCTGAGGGGGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGGTGCGTTGCCCTTCGACGACAACTTGCGCCAGCTGCTGGAGAAAGTCAAGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACACGTTATTCCCACAGCCACCGCGGTGGATCCGGATGTGTTGAACGCGATTTGCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGG
                                                                                   2001-524255/58.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGATGATGAGATTGCGCAAAA 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCTGGCGGCAAAGGG---GAGCTGGAGCTGCCCAATGATGGAGGTGGTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGAGGTCAATCCGGACCGGCGGCTCACGCTGGCTGAAATCAACCGGCATCCGTGGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTACGATGGCCGCAAGGCGGATGTCTGGTCCTGTGGGGTCATCCTCTATGCCCTCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATATGATGGCCGCCGGCCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCAGGACCTGCCTCCCCGGAA 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGAGAAGGTTATATTTCCTGTTGCTCGAGCGCAAACGAAGACGACCTGCGCTGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGCTGTTTCAAGGAGAAGGAGAAACTCATCCAGGAACTGCTCAGTTCAAGTCACAATA
                                                                                                                                                                Nishikawa T,
                                                                                                                                   Sugiyama
                                                                                                                                                          Isogai T,
                                                                                                                                   Nagai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                   Hayashi K,
K, Kojima
                                                                                                                                   ß
                                                                                                                                                                Ishii S,
                                                                                                                                      Otsuki
                                                                                                                                   Kawai Y;
                                                                                                                                   Η;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          568
```

```
FX 8 X 3 3 3 3 3 3 3 3 3 3 3 3 3 X &
                 Š
                                                             멹
                                                                                                  γ
                                                                                                                                          밁
                                                                                                                                                                                Ş
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                              γ
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    덩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 514;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is a full length human cDNA of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2954 BP; 620 A; 970 C; 868 G; 496 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use in genetic manipulation
                     733
                                                                                                                                          639
                                                                                                                                                                                     613
                                                                                                                                                                                                                           579
                                                                                                                                                                                                                                                                 553
                                                                                                                                                                                                                                                                                                          519
                                                                                                                                                                                                                                                                                                                                                  493
                                                                                                                                                                                                                                                                                                                                                                                         459
                                                                                                                                                                                                                                                                                                                                                                                                                               433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACCAAGGGCACCATGTCGTCCGGGGCCAAGGAGGAGGTGGGGGGCTCTCCCGCCTACCA 132
CTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCTTTGATGACGACAACCT 792
                                                                                                                                                                                                                                                                 CCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTT 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGG 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCTAAAACCACCCCAACATCGTGAAGCT 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCCACATGTCCTCAAGCT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCAGCTGAATCCCAGCAGCCTGCA 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCCTGTCGGAGTCGGTGCTGAT 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCAC 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTCCCCCACCCCACCCCACCCACCCAGCACGCCCAATATGTGGGCCCCTATCGGCT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCTTCGCGGACGGTGCTGGCCCCGGGCAACGATCGGAACTCGGACACGCATGGCACCTT 98
                                                             TGCCGCCCCGGAGCTGTTTCAGGGCCAAGAAGTACGACGGGCCGGAGGTGGACATCTGGAG
                                                                                         TGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGTGATGGCCGCCGGGCAGACATGTGGAG
                                                                                                                                          CTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCTGCGGGAGCCCCCCATA 698
                                                                                                                                                                                CATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTA 672
                                                                                                                                                                                                                           CCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCAAGATTGCTGACTTTGG
                                                                                                                                                                                                                                                                                                          GTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAAATATTGTACACAGGGA
                                                                                                                                                                                                                                                                                                                                                  CTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGA 552
                                                                                                                                                                                                                                                                                                                                                                                         CTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGGAGTACGCAAGTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGAGGACCATTGGGAAGGGCAACTTTGCCAAAGTCAAGCTGGCTCGGCACATCCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCCACGTGGGCCAACTACCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGCAGTGGCCGCTCCTCGGACAAAGGCCCGTCCTGGTCCAGCCGCTCACTGGGTGCCCG 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 4157; 1380pp + sequence listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 267.4; DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .6e-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      411; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2954;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                   612
                                                                                                                                                                                                                                                                                                          . 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     218
                                                             758
                                                                                                                                                                                                                           638
```

```
RESULT 11:
AAD18831

ID AAD18831

XX AD18831

XX AD18831

XX AD18831

XX AD18831

XX AD18831

ID AAD18831

ID AAD18831

ID AAD18831

IR AAC18831

IR AAC18831

IR AAC18831

IR AAC18831

IR AAC18831

IR AAC18831

IR AAD18831

IR AAD18831

IR AAC18831

IR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-APR-2000;
28-APR-2000;
05-MAY-2000;
11-MAY-2000;
                                                                                                                                                                                                                                                                                      Yue H, Gandhi AR, Tribouley CM, Kearney L, GILLLI, CT, TJ-L
Bandman O, Lu DAM, Lal P, Burford N, Khan FA, Walla NK, Ya
Patterson C, Burrill JD, Marcus GA, Zingler KA, Recipon SA,
Policky JL, Thornton M, Tang YT, Hafalia A, Elliott VS, Bau
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human kinase; PKIN; gene therapy; adenocarcinoma; immune disorder; gout; cancer; allergy; sarcoma; leukaemia; acquired immune deficiency syndrome; AIDS; Addison's disease; microbial infection; inflammation; osteoporosis; atherosclerosis; cardiovascular disease; myocardial infarction; anaemia; myasthenia gravis; cirrhosis; cataract; growth and development disorder; seizure disorder; pulmonary embolism; Gaucher's disease; lipid disorder; lipid storage disease; Pick's disease; Tay-Sachs disease; renal disease; obesity; restorative therapy; immunomodulatory; vaccine; cardiovascular; antimicrobial; cytostatic; antiinflammatory; asthma; ss.
                               Claim 5; Page 163-164; 166pp; English.
                                                                                                                                                                                                                                                                             Parkers, Ramkumar J,
                                                                                       Human kinases and nucleic acids, useful for preventing diagnosing treating cancers, inflammation and immune disorders -
                                                                                                                                                                                  WPI; 2001-611740/70.
P-PSDB; AAE11782.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-APR-2001; 2001WO-US12992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200181555-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAD18831 standard; cDNA; 3269 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (INCY-) INCYTE GENOMICS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAGCAAATTCAGAAACATCCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCT 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAGCAAATCATGAAAGACAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGACTGTGAGAGCATCCTGCGGAGATTTTTGGTGCTGAACCCAGCTAAACGCTGTACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCCCTTTCTACATGTCAAC 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTTGCCCTTCGACGGGCACAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-199021P
2000US-200226P
2000US-202339P
2000US-203505P
2000US-205564P
2000US-207739P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-208795P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (PKIN)-16 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
17..2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product= "Human PKIN-16 protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                937
                                                                                                                                                                                                                                                                                                                                                                                                                   Nguyen DB;
                                                                                                                                                                                                                                                                                                                            Baughn MR
                                                                                                                                                                                                                                                                                                                                                                                          Yao
                                                                                                                                                                                                                                                                                                                                                                                             ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                818
```

```
밁
                                              Š
                                                                                               망
                                                                                                                                          8
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SO
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cc acids encoding them. PKIN is used as vaccine and in gene therapy. PKIN is used in the prevention, diagnosis and treatment of diseases cancers, cadenocarcinoma, leukaemia, sarcoma, immune disorder, Addison's disease, caquired immune deficiency syndrome (AIDS), anaemia, asthma, altergies, gout, microbial infections, cardiovascular disease and/or inflammation, cmyasthenia gravis, atherosclerosis, cirrhosis, osteoporosis, myocardial comparted inferction, cataract, growth and development disorder, seizure disorder, plumonary embolism, Gaucher's disease, lipid disorder, lipid storage complementary embolism, Gaucher's disease, renal disease and obesity. Pkin may be used to treat disorders associated with decreased pkin complement the patients own production of pkin. Pkin nucleic acids may be used to produce the Pkin by expressing inactive proteins or to cupilement the patients own production of Pkin. Pkin nucleic acids may be used to produce the Pkin polypeptide, by inserting the nucleic acids may be call and culturing the cell to express the protein. Pkin nucleic acid and its complementary sequences may also be used as DNA probes in nucleic acid acid sequences in samples and therefore which patients may be in need of restorative therapy. The present sequence is human Pkin-16 cc DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 514;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3269 BP; 713 A; 1042 C; 939 G; 575 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to human kinases (PKIN) and the nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                      373 CCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         313 GAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     319 GAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCTAAACCACCCCCAACATCGTGAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        253 GGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGAT 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               259 TGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCAGCTGAATCCCAGCAGCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        139 TTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCCACGTGGGCAACTACCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73 GACCAAGGGCACCATGTCGTCCGGGGCCAAGGAGGGAGGTGGGGGGCTCTCCCGCCTACCA 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                CTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGA 552
CTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCTGCGGGAGCCCCCCATA
                                         CATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGGTCCCCCATTA 672
                                                                                          CCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCAAGATTGCTGACTTTGG
                                                                                                                                        CCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGG
                                                                                                                                                                                      GTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAAATATTGTACACAGGGA
                                                                                                                                                                                                                                                                                TGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTT
                                                                                                                                                                                                                                                                                                                                                                           CTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGGAGTACGCAAGTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGAGGACCATTGGGAAGGGCAACTTTGCCAAAGTCAAGCTGGCTCGGCACATCCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCCCCCACCCCACCCCACCCCACCCCAGCACCCCAATATGTGGGCCCCCTATCGGCT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCAGTGGCCGCTCCTCGGACAAAGGCCCGTCCTGGTCCAGCCGCTCACTGGGTGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCTTCGCGGACGGTGCTGGCCCCGGGCAACGATCGGAACTCGGACACGCATGGCACCTT 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.0%;
55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 267.4;
Pred. No. 7.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 411; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .9e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
  678
                                                                                          618
                                                                                                                                        612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               318
                                                                                                                                                                                                                                                                                                                               492
                                                                                                                                                                                                                                                                                                                                                                        438
                                                                                                                                                                                                                                                                                                                                                                                                                         432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

TGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAG

```
RESULT 12
ABA05739
ID ABA05
XX ABA05
AC ABA06
AC ABA07
AC ABA07
AC ABA08
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cerebroprotective; neuroprotective; antiparkinsonian; immunosuppressive; virucide; anti-HIV; antiarthritic; antinflammatory; antiulcer; cancer; cerebral infarction; neurological disease; immunological disease; atopy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-MAR-2002
The present invention provides the protein and coding sequences of two neuronal serine threonine protein kinases each from the mouse and human. These are designated 985 and 985_b. Detection of their expression levels can be used to diagnose the risk of apoplexy and in prognosis of cerebra
                                                                                                                                                  Claim
                                                                                                                                                                                                New polynucleotide, useful for the diagnosis, treatment and of e.g. apoplexy, tumors and autoimmune disease, comprises a polynucleotide encoding the neuronal protein kinase -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200188108-AJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; neuronal serine threonine protein kinase; apoplexy; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABA05739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABA05739 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-MAY-2000; 2000DE-1024171.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schneider A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BADI ) BASF-LYNX BIOSCIENCE AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .nfection; leukaemia; polyarthritis; Crohn's disease; ulcerative colitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            679
                                                                                                                                                                                                                                                                                                                  2002-055696/07
DB; ABB04433.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAGCAAATCATGAAAGACAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAGCAAATTCAGAAACATCCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCT 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCGCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGCCGGAGGTGGACATCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGACTGTGAGAGCATCCTGCGGAGATTTTTGGTGCTGAACCCCAGCTAAACGCTGTACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCT 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCCCTTTCTACATGTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTTCGCCCTTCGACGGCCACAACCT
                                                                                                                                                                                                                                                                                                                                                                                                       Naim
                                                                                                                                               Page 54-55;
                                                                                                                                                                                                                                                                                                                                                                                                 Klaussner B, Fiscl
Eisenhardt G, Kuner
S, Schwaninger M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001WO-EP05660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   serine threonine protein kinase 9B5 coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product= "h9B5" 3275..3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64..3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA;
                                                                                                                                               75pp; German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    נם
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3312
                                                                                                                                                                                                                                                                                                                                                                                                                           Fischer
Kuner R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             937
                                                                                                                                                                                                                                                                                                                                                                                                          Trutzel
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Newrzella
                                                                                                                                                                                                                                                                                                                                                                                                                              Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                 Kammandel
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Goetz
                                                                                                                                                                                                                                                                                                                                                                                                                              В;
                                                                                                                                                                                                                                                           prevention
        cerebral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        852
```

```
δÃ
                                                                                                               ď
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88888888%&
Ş
                                                                                                                                                   Q
                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               infarction. They can also be used to identify agents useful in the prevention, treatment and diagnosis of neurological diseases, includistroke, multiple sclerosis, Parkinson's disease, amyotrophic lateral sclerosis, tumours, especially carcinoma, immunological disorders,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         including autoimmune diseases, atopy, viral (including human immune deficiency virus) infections, acute or chronic leukocytic or myeloid leukaemia, primary chronic polyarthritis, Crohn's disease and ulcerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3312 BP; 710 A; 1071 C; 954 G; 577 T; 0 other;
853
                                                                         793
                                                                                                               786
                                                                                                                                                                                           726
                                                                                                                                                                                                                               673
                                                                                                                                                                                                                                                                     999
                                                                                                                                                                                                                                                                                                                                               909
                                                                                                                                                                                                                                                                                                                                                                                     553
                                                                                                                                                                                                                                                                                                                                                                                                                           546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCAAGCTACTCCATCTGCCACAGAGA 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCTAAACCACCCCAACATCGTGAAGCT
                                                                       CCGCCAGCTGCTGGAGAAGGTGAAACGGGGGGTCTTCCACATGCCCCACTTCATTCCTCC
                                                                                                                                                                                                                                                                                                     CATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTA
                                                                                                                                                                                                                                                                                                                                               CCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCAAGATTGCTGACTTTGG
                                                                                                                                                                                                                                                                                                                                                                                     CCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAAACAACATCCGCATTGCAGACTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAAATATTGTACACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGGAGTACGCAAGTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGGTGGAGCGGGAGATCGCATCCTGAAGCTCATCGAACACCCCACATGTCCTCAAGCT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCAGCTGAATCCCAGCAGCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGAT 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGAGGACCATTGGGAAGGGCAACTTTGCCAAAGTCAAGCTGGCTCGGCACATCCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCAC 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCCACGTGGGCCAACTACCGCCT 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTCCCCCACCCCACCCCACCCCACCCCAGCACGCCCAATATGTGGGCCCCCTATCGGCT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCAGTGGCCGCTCCTCGGACAAAGGCCCGTCCTGGTCCAGCCGCTCACTGGGTGCCCG 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACCAAGGGCACCATGTCGTCCGGGGCCAAGGAGGGAGGTGGGGGGCTCTCCCGCCTACCA 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCTTCGCGGACGGTGCTGGCCCCGGGCAACGATCGGAACTCGGACACGCATGGCACCTT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCCGCGGACGCGTGGGCGGACGCGTGGGGGGGGGGGGACCGGTCGGGCCGG
AGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCCGAAAAAAGGCTCAGTCT
                                     CAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCCCTTTCTACATGTCAAC
                                                                                                               CCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTTGCCCTTCGACGGGCACAACCT
                                                                                                                                                   CTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCTTTGATGACGACAACCT 792
                                                                                                                                                                                         TGCCGCCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGGCCGGAGGTGGACATCTGGAG
                                                                                                                                                                                                                             TGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAG
                                                                                                                                                                                                                                                                   CTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCTGCGGGAGCCCCCCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence is the human 9B5 coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9.0%;
55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 267.4; DB 2
Pred. No. 7.9e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches 411;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                         672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72
                                                                                                                                                                                                                                                                                                                                                                                     612
912
                                                                                                             845
                                                                                                                                                                                                                                                                   725
                                                                                                                                                                                                                                                                                                                                               665
                                                                                                                                                                                                                                                                                                                                                                                                                           605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    365
                                     905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              305
```

0

```
RESULT 13
ABA05740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
Best Local Similarity
                               Query Match
                                                                                                 The present invention provides the protein and coding sequences of two neuronal serine threonine protein kinases each from the mouse and human. These are designated 9B5 and 9B5 b. Detection of their expression levels can be used to diagnose the risk of apoplexy and in prognosis of cerebral infarction. They can also be used to identify agents useful in the prevention, treatment and diagnosis of neurological diseases, including stroke, multiple sclerosis, Parkinson's disease, amyotrophic lateral sclerosis, tumours, especially carcinoma, immunological disorders, including autoimmune diseases, atopy, viral (including human immune deficiency virus) infections, acute or chronic leukocytic or myeloid leukaemia, primary chronic polyarthritis, Crohn's disease and ulcerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; neuronal serine threonine protein kinase; apoplexy; cytostatic; cerebroprotective; neuroprotective; antiparkinsonian; immunosuppressive; virucide; anti-HIV; antiarthritic; antiinflammatory; antilucer; cancer; cerebral infarction; neurological disease; immunological disease; atopy; infection; leukaemia; polyarthritis; Crohn's disease; ulcerative colitis;
                                                                                                                                                                                                                                                                                                             New polynucleotide, useful for the diagnosis, treatment and of e.g. apoplexy, tumors and autoimmune disease, comprises polynucleotide encoding the neuronal protein kinase -
                                                              Sequence
                                                                                                                                                                                                                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                 Schneider A, Klaussner B, Fischer
Rossner M, Eisenhardt G, Kuner R,
Jomana Naim S, Schwaninger M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-MAY-2001; 2001WO-EP05660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABA05740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABA05740 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (BADI ) BASF-LYNX BIOSCIENCE AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-MAY-2000; 2000DE-1024171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200188108-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    906
                                                                                                                                                                                                                                                                                                                                                                                       2002-055696/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAGCAAATCATGAAAGACAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGCAAATTCAGAAACATCCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACTGTGAGAGCATCCTGCGGAGATTTTTGGTGCTGAACCCCAGCTAAACGCTGTACTCT
                                                                                                                                                                                                                                                                                    1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88.
                                                                                         The
                                                                                                                                                                                                                                                                                 Page 55-56; 75pp; German
                                                              3392
                                                                                         present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                              ₿P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           serine threonine protein kinase 9B5_b coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= a
/product= "h9B5"
3355..3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
64..2130
/*tag= a
                                                            726 A; 1099 C; 972 G; 595 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA;
                  9.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3392
                  Score
Pred.
                                                                                           18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       937
                                                                                        the human 985_b coding
                  267.4; DB 24;
No. 7.9e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                               A, Newrzella
Trutzel A, I
                                                                                                                                                                                                                                                                                                                                                                                                                                 Kammandel
                               Length 3392;
                                                                                        sequence
                                                                                                                                                                                                                                                                                                                                                                                                                            . В;
В;
                                                                                                                                                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                                                                                          prevention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  965
                                                                                                            . _
```

Q

CCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGG

CTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGA

**GTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAAATATTGTACACAGGGA** 

TGAGCTATTCGACTACCTGGTAAAGAAGGGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTT

밁

TGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAG

732

725

785

672 665 612 605 552 545 492

TGCCGCCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGGCCGGAGGTGGACATCTGGAG

CTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCTGCGGGAGCCCCCCATA CATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTA CCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCAAGATTGCTGACTTTGG Š

멍

δã

밁 γ

밁

밁

Q 밁 Ω В Ş 밁 δÃ 밁 Ş 밁 Ş

RESULT. 14
AAF44655
ID AAF44
XX
AC AAF44
XX

standard;

cDNA; 1594

В₽

AAF44655 AAF44655 밁 Š В ğ 밁 Ş 밁 Ş 밁 Ωy 밁 δõ

966 913 906 853 846 793 786 733 726 673 666 613 909 553 546 493 486 433

990 937

GGAGCAAATTCAGAAACATCCTTGG CGAGCAAATCATGAAAGACAAATGG

AGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCT CAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCCCTTTCTACATGTCAAC CCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACATGCCCCCACTTCATTCCTCC CCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTGCCCTTCGACGGGCACAACCT CIGIGGAGICAICCTCTICGCCCIGCTGGGGGGCTCIGCCCTIIGAIGACGACAACCT

AGACTGTGAGAGCATCCTGCGGAGATTTTTGGTGCTGAACCCAGCTAAACGCTGTACTCT

```
Matches
   426
                                      373
                                                                         366
                                                                                                          313
                                                                                                                                             306
                                                                                                                                                                                253
                                                                                                                                                                                                                   246
                                                                                                                                                                                                                                                    193
                                                                                                                                                                                                                                                                                       186
                                                                                                                                                                                                                                                                                                                          133
                                                                                                                                                                                                                                                                                                                                                           126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                             73
                                                                                                                                                                                                                                                                                                                                                                                                                                 66
                      CCACGACGTCTACGAGAACAAGAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGG
                                                                    GAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCTAAACCACCCCAACATCGTGAAGCT
CTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGGAGTACGCAAGTGCTGG
                                                                                                        GAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCT
                                                                                                                                          TGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCAGCTGAATCCCAGCAGCCTGCA
                                                                                                                                                                              GGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGAT
                                                                                                                                                                                                                 GCTGAGGACCATTGGGAAGGGCAACTTTGCCAAAGTCAAGCTGGCTCGGCACATCCTCAC
                                                                                                                                                                                                                                                 GGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCAC
                                                                                                                                                                                                                                                                                     TTGCCGGAACTCCATCGCCTGTCCCGAGGAGCAGCCCCACGTGGGCCAACTACCGCCT
                                                                                                                                                                                                                                                                                                                     CCTCCCCACCCCACCCCACCCACCCAGCACGCCCAATATGTGGGCCCCTATCGGCT 192
                                                                                                                                                                                                                                                                                                                                                                                           GGGCAGTGGCCGCTCCTCGGACAAAGGCCCCGTCCTGGTCCAGCCGCTCACTGGGTGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                               GTCTTCGCGGACGGTGCTGGCCCCGGGCAACGATCGGAACTCGGACACGCATGGCACCTT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     514;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     411;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
 485
                                 432
                                                                     425
                                                                                                        372
                                                                                                                                           365
                                                                                                                                                                             312
                                                                                                                                                                                                                 305
                                                                                                                                                                                                                                                 252
                                                                                                                                                                                                                                                                                    245
                                                                                                                                                                                                                                                                                                                                                          185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72
```

```
Š
                                                                                                                     밁
                                                                                                                                                                   δõ
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                       Š
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   neurodegenerative diseases and/or cancers. The nucleic acids and complementary sequences may also be used as DNA probes in diagnostic assays. The kinase polypeptides may be used as antigens in the production of antibodies of kinase expression and activity. Anti-kinase antibodies and kinase antagonists may also be used to down regulate kinase expression and activity. Diseases related to kinase expression and activity. Diseases related to kinase expression and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             oxidative-stress related disorders, chronic inflammatory bowel disease, chronic inflammatory pelvic disease, multiple sclerosis, asthma, osteoarthritis, psoriasis, rhinitis, autoimmunity, diabetes, cancers an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   activity include rheumatoid arthritis, atherosclerosis, autoimmune disorders, complications of organ transplantation, myocardial infarction, immune disorders, cardiomyopathies, strokes, renal failure,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence encodes a novel protein kinase. The nucleic acids and the protein kinases they encode may be used in the treatment and diagnosis of diseases associated with inappropriate kinase expression such as immune-related diseases and disorders, cardiovascular disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic acids encoding kinase polypeptides, useful for diagnosing and treating immune-related diseases and disorders, cardiovascular disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plowman GD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; mouse; protein kinase; antiarthritic; antisclerotic; osteopath. immunosuppressive; cardiant; renal; antiinfilammatory; antiasthmatic; dermatological; antidabetic; antiinfertility; gene therapy; vaccine; immune disorder; cardiovascular disease; neurodegenerative disease; cancer; autoimmune disorder; sitcke; inflammatory bowel disease; fellogations of the protein state of the pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 2; 310pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       neurodegenerative diseases and/or cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200073469-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cancer; autoimmune disorder; stroke; inflammatory bowel dise
inflammatory pelvic disease; multiple sclerosis; psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1594 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SUGE-) SUGEN INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-MAY-2000; 2000WO-US14842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       reproductive disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                   174
                                                          354
                                                                                                                                                                                                                                   140
260
                                                                                                                     200
                                                                                                                                                                               294
                                                                                                                                                                                                                                                                                              234
                                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                    ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                ATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGGGCTGGTTAAAC 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-032161/04
                                                                                                                                                                                                                                                                                                                                                     ATGTGGGCAACTATAGGCTGCTAAGGACCATCGGGAAGGCCAACTTCGCCAAAGTCAAGC
ACCCCAACATCGTGAAGCTTTTTGAGGTGATAGAGACGGAGAAGACGCTATACCTGGTGA 319
                                                                                                                 TGAACCCCAGTAGCTTGCAGAAGCTGTTCAGAGAAGTCCGAATTATGAAGGGACTCAACC
                                                                                                                                                                         TGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC
                                                                                                                                                                                                                                TGGCTCGGCATATCCTCACGGGCCGGGAGGTCGCTATTAAGATCATTGATAAGACCCAGC
                                                                                                                                                                                                                                                                                           TCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein kinase cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB65629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Martinez
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             376 A; 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Whyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 261.6; DB 2
Pred. No. 8.9e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; 458 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sudersanam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                autoimmunity, diabetes, cancers and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 22; Length 1594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antisclerotic; osteopathic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                          413
                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                         139
                                                                                                              259
                                                                                                                                                                         353
                                                                                                                                                                                                                                                                                           293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

Š

Š

```
VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                밁
                                                                                                                    δÃ
                                                                                                                                                                밁
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                              밁
    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     474
    800
                                                                                                                        834
                                                                                                                                                                680
                                                                                                                                                                                                                                              620
                                                                                                                                                                                                                                                                                      714
                                                                                                                                                                                                                                                                                                                                                                                                              500
                                                                                                                                                                                                                                                                                                                                                                                                                                                       594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     414
                                                                                740
                                                                                                                                                                                                        774
                                                                                                                                                                                                                                                                                                                              560
                                                                                                                                                                                                                                                                                                                                                                      654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC 473
                                     CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGG
                                                                                                     TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                                                                                                                                                                                                                  GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 533
                                                                                                                                                                                                    CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 833
                                                                                                                                                                                                                                                                                      GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 653
  CCGCAAAACGCTGTACTCTGGAGCAAATCATGAAAGACAAATGG
                                                                              TCCCCTTCTACATGTCTACAGACTGCGAGAGCATTCTGCGGAGATTTCTGGTGCTGAACC
                                                                                                                                                              CCTTCGATGGGCACAACCTCAAGGAGCTGCGGGAGCGAGTCCTCAGAGGAAAGTACCGGG
                                                                                                                                                                                                                                            CAGAGGTGGACATCTGGAGCCTGGGTGTCATCCTGTACACGCTGGTCAGCGGCTCCCTGC
                                                                                                                                                                                                                                                                                                                            TCTGTGGGAGCCCCCATACGCCGCCCCAGAGCTGTTCCAGGGCAAGAAGTATGATGGGC
                                                                                                                                                                                                                                                                                                                                                                                                            TCAAAATCGCCGACTTCGGCTTCAGCAATGAGTTCACGCTGGGCTCCAAGCTGGACACCT 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAACATTGTACACAGGGATCTAAAGGCTGAAAACCTGTTGCTGGATGCCGAGGCCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGGAGGCTCGAGCCAAGTTCCGGCAGATCGTGTCAGCCGTGCACTACTGTCATCAGA 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAATACGCTAGCGCAGGAGAAGTGTTTGACTACCTCGTGTCGCACGGCCGCATGAAGG
843
                                                                                                                      893
                                                                                                                                                                                                                                                                                                                              619
                                                                                                                                                                                                                                                                                                                                                                    713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             499
                                                                                799
                                                                                                                                                              739
                                                                                                                                                                                                                                              679
                                                                                                                                                                                                                                                                                      773
```

Š

Ş

Š

```
RESULT 15
ABA05737
ID ABA05
cerebroprotective; neuroprotective; antiparkinsonian; immunosuppressive; virucide; anti-HIV; antiarthritic; antiinflammatory; antiulcer; cancer; cerebral infarction; neurological disease; immunological disease; atopy;
                                                                                                                                                                                                                                                                                       Murine neuronal
                                                                                                                                                                                                                                                                                                             04-MAR-2002
                                                                                                                                                                                                                                                                                                                                     ABA05737;
                                                                                                                                                                                                                                                                                                                                                           ABA05737 standard; cDNA; 3170
                                                                                                                                                                                      Mus musculus.
                                                                                                                                                                                                                                                                 Mouse; neuronal
                                                                                                                                                                                                                     infection;
                                                                                                                                                                                                                      leukaemia; polyarthritis; Crohn's disease; ulcerative colitis;
                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                 serine threonine protein kinase; apoplexy; cytostatic;
                                                                                                                                                                                                                                                                                      serine threonine protein kinase
                                                                                                                                                                                                                                                                                         9B5
                                                                                                                                                                                                                                                                                      coding sequence.
```

CDS

(BADI ) BASE-LYNX BIOSCIENCE AG

17-MAY-2000; 17-MAY-2001;

2000DE-1024171. 2001WO-EP05660. WO200188108-A1

22-NOV-2001.

polyA\_signal

/\*tag= a /product= " 3094..3099

1..2175

Location/Qualifiers

Ş

774

CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 833

739

799

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 467;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention provides the protein and coding sequences of two neuronal serine threonine protein kinases each from the mouse and human. These are designated 9B5 and 9B5_b. Detection of their expression levels can be used to diagnose the risk of apoplexy and in prognosis of cerebral infarction. They can also be used to identify agents useful in the prevention, treatment and diagnosis of neurological diseases, including stroke, multiple solerosis, Parkinson's disease, amyotrophic lateral sclerosis, tumours, especially carcinoma, immunological disorders, including autoimmune diseases, atopy, viral (including human immune diseases, atopy, viral (including human immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             deficiency virus) infections, acute or chronic leukocytic or myeloid leukaemia, primary chronic polyarthritis, Crohn's disease and ulcerative colitis. The present sequence is the murine 9B5 coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3170 BP; 714 A; 988 C; 897 G; 571 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 52-53; 75pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polynucleotide encoding the neuronal protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New polynucleotide, useful for the diagnosis, treatment and prevention of e.g. apoplexy, tumors and autoimmune disease, comprises a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jomana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rossner M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schneider A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           414
620 CAGAGGTGGACATCTGGAGCCTGGGTGTCATCCTGTACACGCTGGTCAGCGGCTCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      234
                                                                                             560
                                                                                                                  654 GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATATGATGGCC 713
                                                                                                                                                                                       500
                                                                                                                                                                                                                                  594
                                                                                                                                                                                                                                                                               440
                                                                                                                                                                                                                                                                                                     534 ACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAAAACAACA 593
                                                                                                                                                                                                                                                                                                                                                                          380
                                                                                                                                                                                                                                                                                                                                                                                                                     474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match 8.7%;
Local Similarity 57.4%;
tes 467; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 533
                                             GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGC 773
                                                                                                                                                                                                                                TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCA 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGC 473
                                                                                          TCTGTGGGAGCCCCCATACGCCGCCCCAGAGCTGTTCCAGGGCAAGAAGTATGATGGGC
                                                                                                                                                                                     TCAAAATCGCCGACTTCGGCTTCAGCAATGAGTTCACGCTGGGCTCCAAGCTGGACACCT
                                                                                                                                                                                                                                                                             AGAACATTGTACACAGGGATCTAAAGGCTGAAAACCTGTTGCTGGATGCCGAGGCCAACA 499
                                                                                                                                                                                                                                                                                                                                                                     AGAAGGAGGCTCGAGCCAAGTTGCGGCAGATCGTGTCAGCCGTGCACTACTGTCATCAGA 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAATACGCTAGCGCAGGAGAAGTGTTTGACTACCTCGTGTCGCACGGCCGCATGAAGG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCCCAACATCGTGAAGCTTTTTGAGGTGATAGAGACGGAGAAGACGCTATACCTGGTGA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGC 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2002-055696/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAACCCCAGTAGCTTGCAGAAGCTGTTCAGAGAAGTCCGAATTATGAAGGGACTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGCTCGGCATATCCTCACGGGCCGGGAGGTCGCTATTAAGATCATTGATAAGACCCAGC 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTGGGCAACTATAGGCTGCTAAGGACCATCGGGAAGGGCAACTTCGCCAAAGTCAAGC 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 der A, Klaussner B, Fischer A, Newrzella D,
r M, Eisenhardt G, Kuner R, Trutzel A, Kamm
Naim S, Schwaninger M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 346; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 259.4; DB 24; Length 3170; Pred. No. 2.9e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kammandel B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Goetz B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Gaps
                                                                                        619
                                                                                                                                                                                  559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

Š 밁 Š 멍 ρ 밁 Š

679

Ş

Š

밁 δã 밁 γ В Q В 954 008 894 740 834 680 TCCCCTTCTACATGTCTACAGACTGCGAGAGCATTCTGCGGAGATTTCTGGTGCTGAACC ACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTG 986 CCGCAAAACGCTGTACTCTGGAGCAAATCATGAAAGACAAATGGATCAACATCGGCTATG 859 CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAAC 953 TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC 893 CCTTCGATGGGCACAACCTCAAGGAGCTGCGGGAGCGAATCCTCAGAGGAAAGTACCGGG AGGGTGAGGAGCCTGAAGCCATACACGGAGCCTG 892

Search completed: April 21, 2003, 20:31:16 Job time: 428.371 secs

```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        639749 segs, 502280978 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-003-690-1
2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                April 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 gtcgacccacgcgtccgcgg.....aaaaaaaagggcggccgcta 2980
                                                                                                                                                                                                                                                                                                                                                                                        Published_Applications_NA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                            /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_NEM_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_NEM_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US60_NEM_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*
                                                                                                                                                                                                                                                     2_6/ptodata/2/pubpna/US07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2003, 23:05:46; Search time 182.254 Seconds (without alignments) 16425.361 Million cell upda
                                                                                                                                      _6/ptodata/2/
                                                                                                                                      _6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
                                                                                                                                                                                                                     /ptodata/2/pubpna/PCTUS_PUBCOMB.seq:*
                                                                                                                                                                                                                                                  _NEW_PUB.seq: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cell updates/sec
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result

No Lt	Score	Query Match	Length	DB	ID	Description
_	965	32.4	2007	12	US-10-054-579-1	Sequence 1, Appli
N	961	32.2	2025	9	US-09-842-582-3	`~
ω	961	32.2	2219	9	US-09-842-582-1	
4	851.4	28.6	1827	12	US-10-054-579-3	Sequence 3, Appli
G	512	17.2	512	10	US-09-960-253-87	Sequence 87, Appl
6	296.8	10.0	2173	9	US-10-102-558-1	
7	265.8	8.9	3270	10	US-09-835-081-1	Sequence 1, Appli
8	257.8	8.7	316	9	US-09-764-868-191	91,
9	240.6	8.1	2112	10	US-09-919-585-4	Sequence 4, Appli
10	240.6	8.1	2222	10	US-09-919-585-7	Sequence 7, Appli
11	225.4	7.6	1539	9	US-09-938-842A-2657	Sequence 2657, Ap
12	221.4	7.4	2352	10	US-09-815-915-3	Sequence 3, Appli
13	221.4	7.4	2968	10	US-09-815-915-1	-
14	215	7.2	275	10	US-09-960-352-5086	$\simeq$
15	207	6.9	5983	10	US-09-799-875-4	Sequence 4, Appli
16	202.8	6.8	3609	10	US-09-799-875-6	6
17	196.8	6.6	1539	9	US-09-938-842A-162	Sequence 162, App
18	196	6.6	3154	10	US-09-919-585-19	
19	181	6.1	3079	10	US-09-834-975-974	974

44	43	42	41	40	39	38	37	36	ω 5	34	ω ω	32	ω H	30	29	28	27	26	25	24	23	22	21	20
115.8 112	116.6	118.6	119.2	126.8	126.8	130.2	133	137	139.8	147	147	147	147	152.6	153.4	153.8	157	167.2	172.4	174	174	177.6	178	179.4
3.9 8	3. 9	4.0	4.0	4.3	4.3	4.4	5	4.6	4.7	4.9	4.9	4.9	4.9	5.1	5.1	5 2	ن. س	ა ნ	5. 8	5. 8	ა. დ	6.0	6.0	6.0
3061 1308	1750	610	3594	1635	1326	2519	1326	1005	2162	2470	2470	2470	2453	1986	2884	6828	267	4557	1266	3353	1884	1902	2706	2271
9	9	9	9	10	9	9	9	9	10	10	10	10	9	10	10	10	10	10	9	10	10	10	10	10
US-09-880-107-2146 US-09-938-842A-1559	US-10-142-356-1	US-10-040-739-475	US-09-836-392-7	US-09-880-107-2340	US-09-938-842A-2313	US-10-071-766-82	US-09-938-842A-72	US-10-142-356-4	US-09-822-849A-483	US-09-880-107-1725	US-09-954-456-1121	US-09-870-937-9	US-09-974-298-111	US-09-780-949-3	US-09-780-949-5	us-09-780-949-1	US-09-983-965-2108	US-09-801-368-151	US-09-938-842A-1288	us-09-963-159-1	US-09-963-159-3	US-09-801-368-337	US-09-919-585-10	us-09-919-585-1
Sequence 2146, Ap Sequence 1559, Ap	Sequence 1, Appli	Sequence 475, App	Sequence 7, Appli	Sequence 2340, Ap	Sequence 2313, Ap	Sequence 82, Appl	Sequence 72, Appl	Sequence 4, Appli	Sequence 483, App	Sequence 1725, Ap	5	Sequence 9, Appli	Sequence 111, App	Sequence 3, Appli	ū	Sequence 1, Appli	Sequence 2108, Ap	Sequence 151, App	Sequence 1288, Ap	Sequence 1, Appli	Sequence 3, Appli	Sequence 337, App	Sequence 10, Appl	Sequence 1, Appli

## ALIGNMENTS

```
ğ
                                                                                                                                        밁
                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 4
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 2007
TYPE: DNA
ORGANISM: homo sapiens
US-10-054-579-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 1
US-10-054-579-1
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 32.4%;
Best Local Similarity 70.0%;
Matches 1484; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/10054579 Patent No. US20020137913A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Turner, C. Alexander Jr.
APPLICANT: Mathur, Brian
TITLE OF INVENTION: NO. US20020137913A1el Human Kinases and Polynucleotides Encodi
FILE REFERNCE: LEX-0300-USA
CURRENT APPLICATION NUMBER: US/10/054,579
CURRENT FILING DATE: 2002-01-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT FILING DATE: 2002-01-22
PRIOR APPLICATION NUMBER: US 60/263,378
PRIOR FILING DATE: 2001-01-23
                                                                                                                                                                                                                                                                       219
399 ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGA 458
                                                                                           339
                                                                                                                                                                               279 TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC 338
                                                                                                                                      149 TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC 208
                                                                                                                                                                                                                                                                                                                                                                  159 CCCAGCACGCCCAATATGTGGGCCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 218
                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                          29
                                                                     TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 398
                                                                                                                                                                                                                                                    CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 278
                                                                                                                                                                                                                                                                                                                     CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG 148
                                             TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAAACAAAAAAT 268
                                                                                                                                                                                                                                                                                                                                                                                                                0,:
                                                                                                                                                                                                                                                                                                                                                                                                             Score 965; DB 12;
Pred. No. 2.1e-216;
0; Mismatches 440;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2007;
                                                                                                                                                                                                                                                                                                                                                                                                                Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                6
```

45 A

밁

밁

õ 밁 Š 밁 õ 밁 Š 밁 Ş 8 Ş 맑 õ 밁 Š 밁 δ 밁 Š

Š

<del>л</del>	なななないこのようなななななないであるとなっているとのなっては、それの心をなっているとのなななななななななななない。	147
12	4 TCAGCAGCCCCG	127
14	AAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGG	141
14 12	9 AGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC	135 121
13 12	9 TCACCGATGCCGGGGGTGGTGGCTCCCCCTGTACCCACCC	129 116
12 11	9 CCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCA 	1239 1103
12 11	AGGACCAGGACCTGCCTCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC	1179 1043
11 10	9 ACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG	1119 983
11 98	CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAAAAACTGCTGGGCTGCTGCTGCGAGGAGGAGGAGAAGAAGACTGCTGCAGGACCTGCTGCTGCAGGAGGAGGAGAAGAAGAAGAAGAAGAAGAAGAAGAAG	1059 923
10 92	99 CCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCAT	999
98	39 ACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCC	93
93	TGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT	879 749
87 74	119 GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGGCCTCCTGAGGGGAA	819 689
81	59 TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC	75 62
75 62	99 AAAATATGATGGCCGGCGGGCACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC	569
56	39 GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG	50 50
50	ITAGAAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA	579 449
57 44	19 ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGG	519 389
3g	9 AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGG	459 329
ω		26

밁

```
õ
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρy
   밁
                         Ş
                                                   밁
                                                                       Qy
                                                                                                   밁
                                                                                                                          δÃ
                                                                                                                                                   밁
                                                                                                                                                                             Š
                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA; ORGANISM: Homo sapiens US-09-842-582-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 32.2%; Score 961; DB 9; Best Local Similarity 70.1%; Pred. No. 1.8e-215; Matches 1477; Conservative 0; Mismatches 435;
                                                                                                                                                                                                                                                                                                                                                               509
                                                                                                                                                                                                                                                                                                                                                                                       639
                                                                                                                                                                                                                                                                                                                                                                                                               449
                                                                                                                                                                                                                                                                                                                                                                                                                                         579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         149
   923
                                                                             999
                                                                                                      608
                                                                                                                              939
                                                                                                                                                      749
                                                                                                                                                                                 879
                                                                                                                                                                                                         689
                                                                                                                                                                                                                                  819
                                                                                                                                                                                                                                                          629
                                                                                                                                                                                                                                                                                   759
                                                                                                                                                                                                                                                                                                             569
                                                                                                                                                                                                                                                                                                                                      699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         159 CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCCTGGGCAAAGGACAGA 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29
                                                                                                                                                                                                                                                                                                         AAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC 758
                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAACAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 278
TGATCGAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                     GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGGCTCCTGAGGGGAA 878
                                                                                                                                                                                                                                                         GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTCTGCGCTGG 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGCTCATCGAACACCCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCAGCACGCGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGCAGA 88
                                                                          CCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCAT 1058
                                                                                                                           TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC 818
                                                                                                                                                                                                                                                                                                                                                                                                              ACGAGAAGAACAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTTCTGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGCAAAAACCTCCTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGA
                                                   AGATCCGCTCGCTGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT 922
                                                                                                     ATATAGGGGGCAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGC 862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches 435; Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                      698
                                                                                                                                                                                                                                                                                                                                                             568
                                                                                                                                                                                                                                                                                                                                                                                                               508
                                                                                                                                                                                                                                                                                                                                                                                                                                                               448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148
                                                                                                                                                                                                                                                          889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
```

Ş

1119 ACCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG 117

Qy 21	Db 18	0у 21	Qy 20 Db 17	Oy 20 Db 17	ОУ 19 Db 16	Oy 189	Ду 18 Дъ 15	Oy 177	Oy 17 Db 14	Qy 16 Db 13	Qy 15 Db 13	Qy 15 Db 12	Db 12	0у 14	Qy 141 Db 127	Qy 13 Db 12	Qy 12 Db 11	Оу 12 рь 11	Qy 117 Db 104	рь 9
99 TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC 2258	.814 ACGGCATCTACTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGG 1873	PACTCCGTCACCTTCACTCTCAGCGTCCCAGCCGTCGGTTCAA	079 TGGACATCAGCTCCTCTGAGGGTCCAGAGGCCTCCCCGCGACGGGACGGCAGCGGAGGGTG 2138	019 GGGCCGAGTACAAGGCCAGTGGGGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGG 2078 	959 TCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGGTGTCACAGACCAGCTTCA 2018	99 AAGAACAAATATTCCTCGTGGTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCG 1958 	839 AGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAG 1898 	79 GCTTTCACCGGCGAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG 1838 	.719 GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC 1778	659 GGGCCAGTCCCACCGGGGACCCCGGGGGACACACCCCCCCAGCCCCGGGGGG	99 CCCCAGGCTCCCCGCGCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1658	39 GTGGGGCGCCGGGGAGCAGCCCCCGCCCCAGTGCCCGCTCCACACCCCTGCCCGGCC 1598	287 1286	.479 CTCGAGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGG 1538	419 TAAGCAGCCCAÁGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGG 1478	159 AGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC 1418	299 TCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCC 1358	239 CCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGATCCTGAGCA 1298 	179 AGGACCAGGACCTGCCTGCCCCGGAATGATGTTGACCCCCCCGGGAAGCGTGTGGATTCTC 1238	

561 GCCTGTTGGAGACCAGCTTGGGGTCCCCCACTTGCCCCGAGGTGATCCGGGGGGG 620	B
639 GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG 698	Qy 6
л	
579 ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA 638	Qy 5
441 ACTICIGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGG 500	Db 4
519 ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGG 578	oy :
381 AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG 440	В .
459 AGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTGTCTGCGCTGG 518	Qy (
321 ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGA 380	Db 3
399 ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGA 458	Qγ
261 TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAACAAAAAAT 320	рb
339 TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 398	Qy :
201 TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC 260	₽
279 TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC 338	Qy
141 CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG 200	₽ :
219 CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 278	Qy
81 CGCAGCACGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGCAAGA 140	용
~	Qy :
Query Match  32.2%; Score 961; DB 9; Length 2219; Best Local Similarity 70.1%; Pred. No. 1.9e-215; Matches 1477; Conservative 0; Mismatches 435; Indels 195; Gaps	Query Best Match
NAME/KEY: CDS LOCATION: (53)(2077) 09-842-582-1	; NAI ; LO US-09-1
X X	; ORC
Q ID NO 1 LENGTH: 2219	ຜ
NUMBER OF SEQ ID NOS: 11 SOFTWARE: FastSEQ for Windows Version 4.0	
PRIOR APPLICATION NUMBER: US 60/199,391 PRIOR FILING DATE: 2000-04-25	
CURRENT APPLICATION NUMBER: US/09/842,582 CURRENT FILING DATE: 2001-04-25	
TITLE OF INVENTION: USES THEREFOR FILE REFERENCE: 38155-20054.00	
INVENTION: 2246,	
NT: Millennium Pha	6
582-1	
1934 TGTCAGA 1940	рь 1:
2259 TGGCAGA 2265	Qy 2:
1874 TGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCGCCTGCGGCCCAGCACT 1933	Db 11

```
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 1827
TYPE: DNA
ORGANISM: homo sapiens
US-10-054-579-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                        밁
                                                                        ş
                                                                                                            밁
                                                                                                                                           Ş
                                                                                                                                                                                   밁
                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-054-579-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/10054579
Patent NO. US20020137913A1
GENERAL INFORMATION:
APPLICANT: Turner, C. Alexander Jr.
APPLICANT: Mathur, Brian
TITLE OF INVESTION: NO. US20020137913A1e1 Human Kinases and Polynucleotides Encoding
FILE REFERENCE: LEX-0300-USA
CURRENT ELING DATE: 2002-01-22
PRIOR APPLICATION NUMBER: US/10/054,579
CURRENT FILING DATE: 2002-01-23
PRIOR APPLICATION NUMBER: US 60/263,378
PRIOR FILING DATE: 2001-01-23
NUMBER OF SEO IT NOS. 4
                                                                                                                                                                                                                                                         Matches 1356;
                                                                                                                                                                                                                                                                             Query Match 28.6%;
Best Local Similarity 68.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1986 TGTCAGA 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2259 TGGCAGA 2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1524 GCTTCCACCGCCGGAAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAG
                                                                                                                                                  371
                                                                                                                                                                                                        311 ATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCCACATGTCCTCAAG 370
                                         121
491 TTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGA 550
                                                                                                              61
                                                                                                                                                                                   1 ATGAAGGTGGAGCGGGAGATCGCGATCCTGAAGCTCATTGAGCACCCCCACGTCCTAAAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTTTCCAAAAGCCCCGTCCGCTTCCAGG
                                                         GGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCGAAAG 490
                                                                                                                                 CTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGG 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCAGCCACT 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC 2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGATATCACCTACACGGAGGGT------------GGGGAGGCGCAGAAGGAGA 1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCCGAGTACAAGGCCACGGGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCACGCCTTCCTGTCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCCAAACGAGCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAGCAGATCTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCG
                                    GGTGAGCTCTTCGACTACCTGGTGAAGAAGGGGGAGGCTGACGCCTAAGGAGGCTCGGAAG 180
                                                                                                          CTGCACGACGTTTATGAAAACAAAAAATATTTGTACCTGGTGCTAGAACACGTGTCAGGT 120
                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                        Score 851.4; DB 12; Length 1827; Pred. No. 8.5e-190; O; Mismatches 416; Indels 195;
                                                                                                                                                                                                                                                         Indels 195; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1958
                                                                                                                                                                                                                                                         6
```

σ	181		40
א ק	551 241	GACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTC 6	00
9 4	611 301	AC 3	60
ъ ч	671 361	GGGAAAATATGATGGCCGCCGGGCAGACATGTGG 7	30
p 4	731 421	AGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAAC 7	90
ь ч	791 481	CTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCT 8	40
ъ .	851 541	CCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAAGGCTCAGT 9	00
8 4	911	CTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACCCGTGC 9	70
P 4	971 657	CTGCCATCCAACGGAGAGCTG 1	030
9	1031 715	GACCCCGACGTCCTAGAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCCCGAGAGAGGCTG 1	090
4	1091 775	CATCGCGAGCTGCGCAGTGAGGAGGAGAAACCAAGAAAAGATGATATTATCTGCTTTTG 1	150 34
P 4	1151 835	GATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGACCTGCCTCCCCGGAATGATGTT 1	210
9 4	1211 895	GACCCCCCCGGAAGCGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCA 1	270 54
. p4	1271 955	GATGCCGGGGGTGGTGGCTCCCCTGTA 1 	330
9 4	1331 1006	GAGATCCCGTAGCGTCAGTGGA 1	390
₽ ⊀	1391 1066	CTTTTCCTTT 1	450 107
Y	1451	CGACTTCCAAAACG 1	510
Ď	1108	1	107
₽ ⊀	1511 1108	CTCGGGGCCCCAGGGTGGGGGGGCGCCGGGGGAGCACCCCCCCC	570 127
Y	1571	AGTGCCCGCTCCACACCCCTGCCCGGCCCCCAGGCTCCCCGCGCTCCTCTGGCGGGACC 1	630

```
604 AGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTC 663
                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1614
                               0
                            Qy
                                                                                     Ş
                                                                                                                        뫄
 밁
                                                            멁
                                                                                                                                                   Qy
                                                                                                                                                                                                                                               US-10-102-558-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 6
US-10-102-558-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                 Query Match 10.0%;
Best Local Similarity 73.4%;
                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/102,558
CURRENT FILING DATE: 202-03-20
NUMBER OF SEO ID NOS: 2
SOFTWARE: PatentIn version 3.1
SEO ID NO 1
LENGTH: 2173
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/10102558 Publication No. US20030038706A1 GENERAL INFORMATION:
                                                                                                                                                                                  Matches 401;
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Dai, Ken-Shwo
TITLE OF INVENTION: HUMAN PEN11B-RELATED GENE VARIANT ASSOCIATED WITH LUNG CANCERS
FILE REFERENCE: U 013922-3
                                                                                                                                                                                                                                                           NAME/KEY: CDS
LOCATION: (128)..(574)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens FEATURE:
                                                                          1755 GCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTG 1814
                                                                                                                                    1695 CCCCCAGCCCCGGCGGTGGCGTCGGGGGAGCCGCCTGGAGGAGGAGTCGTCTCAACCTCCATCC 1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1024
                               1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        664
                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                        w
AGGAGATGTCCAACCTGACACCAGAGTCGTCCCCAGAGCTGGCGAAGAAGTCCTGGTTTG
                                                                                                                     CGCCCCCGTCCAGCCCCAGCGTCGGAGGGGTGCCCTGGAGGGCGCGGCTCAACTCCATCA 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGCTGCATCGCGAGCTGCGCAGTGAGGAGG 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGGTAGCCATGCGGAGCCTGCCATCCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCCTTTGATGA 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAAACGCTCCTGGTTCG 1874
                                                        AGAACAGCTTTCTGGGCTCACCCCGCTTCCACCGCCGGAAACTGCAAGTTCCGACGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATGCGAGCCTGCCATCCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGCCCGAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCCTTTGATGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGA 120
                                                                                                                                                                                  Conservative
                                                                                                                                                                                  0,
                                                                                                                                                                               Score 296.8; DB 9;
Pred. No. 9.1e-60;
0; Mismatches 127;
                                                                                                                                                                                 Indels
                                                                                                                                                                                                             Length 2173;
                                                                                                                                                                                 18;
                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                               ۲,
```

Ş 밁 δÃ В Š

1726

US-09-960-253-87 Sequence 87, Application US/09960253 Patent No. US20020123619A1 GENERAL INFORMATION:

δĀ

밁 ρy 밁 Q 밁 Š 밁

1931

1444

맑

1564

Qy

1324 1811

1871

Qy 멂 Ş

1751

밁

1264

ρy

Б

밁

1691

Š

Query Match Best Local :

Local Similarity nes 512; Conserv

Conservative

0;

17.2%;

Score 512; Pred. No. Mismatches

DB 10; 1 1.8e-110; 0;

Length Indels

0;

SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 87 LENGTH: 512

APPLICANT: Benson, Darin R.
APPLICANT: Mohamath, Raodoh
APPLICANT: Lodes, Michael J.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY
TITLE OF INVENTION: AND DIAGNOSIS OF LUNG CANCER
FILE REFERENCE: 210121.556
CURRENT APPLICATION NUMBER: US/09/960,253
CURRENT FILING DATE: 2001-09-20
NUMBER OF SEQ ID NOS: 187

LENGTH: 512 TYPE: DNA ORGANISM: Homo sapiens -09-960-253-87

```
õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                   õ
                                                                        밁
                                                                                                                                          В
                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                        Ş
                                                                                                                                                                                                                 뭐
                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-835-081-1
                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-835-081-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/835,081
CURRENT FILING DATE: 2001-04-16
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 3270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: YAN, Xianghe et al.
APPLICANT: YAN, Xianghe et al.
TITLE OF INVENTION: ISOLATED HUMAN KINASE PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES ENCODING HUMAN KINASE PROTEINS, AND
TITLE OF INVENTION: THEREOF
FILE REFERENCE: CL001224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/09835081 Patent No. US20020151020A1
                                                                                                                                                                                                                                                                                                                                                                            Query Match 8.9%;
Best Local Similarity 55.5%;
                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1995
 273
                                     253
                                                                        213
                                                                                                            193
                                                                                                                                             153
                                                                                                                                                                               133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     183
                                                                                                                                                                                                                   93
                                                                                                                                                                                                                                                                                        33
                                                                                                                                                                                                                                                    73
                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCGACGGGACGGCAGCAGGTGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTC
                                   GGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGAT 312
                                                                                           GGAGAAGACGCTGGGCAAAGGACAGACAGGCTGGTTAAACTCGGGGTCCACTGCATCAC
                                                                                                                                        TTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCACGTGGGCAACTACCGCCT 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGACC 2240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCAGAAGCCGGTCAAGTTCCAGGTTGATATCACCTACACGGAGGGT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACA 1994
TGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCAGCCGAATCCCAGCAGCCTGCA 332
                                                                      GCTGAGGACCATTGGGAAGGGCAACTTTGCCAAAGTCAAGCTGGCTCGGCACATCCTCAC
                                                                                                                                                                             CCTCCCCCACCCCCACCCCACCCCACCCCAGCACGCCCAATATGTGGGCCCCTATCGGCT 192
                                                                                                                                                                                                                 GGGCAGTGGCCGCTCCTCGGACAAAGGCCCGTCCTGGTCCAGCCGCTCACTGGGTGCCCG
                                                                                                                                                                                                                                                  GACCAAGGGCACCATGTCGTCCGGGGCCAAGGAGGGAGGTGGGGGGCTCTCCCGCCTACCA 132
                                                                                                                                                                                                                                                                                      GTCTTCGCGGACGGTGCTGGCCCCGGGCAACGATCGGAACTCGGACACGCATGGCACCTT 92
                                                                                                                                                                                                                                                                                                                        ACGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCCCAGCCGTCGCTTCAAGAGGGTGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTCATCTCCCAAACGAGCTTCCGGGCCGAGTACAAGGCCACGGGGGGGCCAGCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTGCTGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCT 2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGCTCCATCAAGGCTGACATCGTGCACGCCTTCCTGTCGATTCCCAGTCTCAGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAACTTCATCAGCCTGGAGAAGGAGGAGCAGATCTTCGTGGTCATCAAAGACAAACCTC
                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                            Score 265.8; DB Pred. No. 2e-52;
                                                                                                                                                                                                                                                                                                                                                           Mismatches 412; Indels
                                                                                                                                                                                                                                                                                                                                                                                             DB 10;
                                                                                                                                                                                                                                                                                                                                                                                           Length 3270;
                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2114
                                                                                                        252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302
                                                                        272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USES
                                                                                                                                                                                                                                                                                                                                                           0
```

```
; SOFTWARE: PatentIn Ver. 2
; SEQ ID NO 191
; LENGTH: 316
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-764-868-191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş,
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 8
US-09-764-868-191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Rosen et al.
APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
FILE REFERENCE: PT332
CURRENT APPLICATION NUMBER: US/09/764,868
CURRENT FILING DATE: 2001-01-17
                                                                                     Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                   Sequence 191, Application US/09764868 Patent No. US20020168711A1
                                                                       Matches
                                                                                                                                                                                                                                              Prior application data removed - NUMBER OF SEQ ID NOS: 1510
                                195 AGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGG 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     313 GAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCT 372
 \vdash
GGAGCAAATTCAGAAACATCCTTGG 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAGCAAATCATGAAAGACAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAAATATTGTACACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTT 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCCTAAACCACCCCCAACATCGTGAAGCT 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAAGGCTCAGTCT 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTGCCCTTCGACGGGCACAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCTGCGGGAGCCCCCCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCCATTA 672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAAACAACATCCGCATTGCAGACTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGA 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGG 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGACTGTGAGAGCATCCTGCGGAGATTTTTTGGTGCTGAACCCCAGCTAAACGCTGTACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCCCTTTCTACATGTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCCGCCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGGCCCGGAGGTGGACATCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCAAGATTGCTGACTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGGAGTACGCAAGTGCTGG
                                                                                   h 8.7%;
Similarity 98.8%;
                                                                       Conservative
                                                                                   Score 257.8; DB 9
Pred. No. 5.6e-51;
                                                                                                                                                                                                                                                               refer to
                                                                       Mismatches
                                                                                                                                                                                                                                                               PALM
                                                                                                    DB 9;
                                                                                                                                                                                                                                                               or
                                                                       0;
                                                                                                                                                                                                                                                               file wrapper
                                                                                                    Length
                                                                     Indels
                                                                   0;
                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     632
                                                                   0
```

```
RESULT 9
US-09-919-585-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANY: WILLIAMS, Lewis T.

TITLE OF INVENTION: ISOLATION OF DROSOPHILA AND HUMAN POLYNUCLEOTIDES ENCODING PAR-1

TITLE OF INVENTION: POLYVEDTIDES ENCODED BY THE POLYNUCLEOTIDES AND METHODS UTILIZI

TITLE OF INVENTION: POLYVEDTIDES AND POLYVEDTIDES AND METHODS UTILIZI

TITLE OF INVENTION: POLYVEDTIDES AND POLYVEDTIDES

FILE REFERENCE: PP-016093.002/200130.525

CURRENT APPLICATION NUMBER: US/09/919,585

CURRENT APPLICATION UNMBER: US/09/919,585

CURRENT FILING DATE: 2001-07-30

NUMBER OF SEQ ID NOS: 22

SOFTWARE: FASTSEQ for Windows Version 4.0

SEQ ID NO 4

LENGTH: 2112

TYPE: DNA

ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4, Application US/09919585 Patent No. US20020115167A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Sun, Tian-Qiang APPLICANT: Feng, Jia-Jia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                    CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCC
                                                                                                         AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT
                                                                                                                                                                                              AGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCA
                                                                                                                                                                                                                                                         CCAACATAGTTAAATTATTTGAAGTGATTGAGACTGAGAAAACGCTCTACCTTGTCATGG
TTATTGTCCATAGAGACTTAAAGGCAGAAAACCTGCTCTTGGATGCTGATATGAACATCA
                                                                                     AAGAGGCTCGAGCCAAATTCCGCCAGATAGTGTCTGCTGCAGTACTGTCACCAGAAGT
                                                                                                                                                                        CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                       CGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCGACACCTCCTGACTGGGAAAGAGGTAGCTGTGAAGATCATTGACAAGACTCAACTGA 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGGAAACTACCGGCTCCTCAAGACCATTGGCAAGGGTAATTTTGCCAAGGTGAAGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTATTCGACTACCTGGT 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGA
                                                                                                                                                                                                                                                                                                                                                ACTCCTCCAGCCTCCAGAAACTATTCCGCGAAGTAAGAATAATGAAGGTTTTGAATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTATTCGACTACCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGRCGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Feng, Jia-Jia
Reinhard, Christoph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fantl, Wendy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 240.6; DB 10;
Pred. No. 1.3e-46;
0; Mismatches 359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                         356
                                                                                   427
                                                                                                                                                                                                                                                         307
                                                                                                                                                                                                                                                                                                   416
                                                                                                                                                                                                                                                                                                                                              247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                      δõ
                                                                                밁
                                                                                                                       δÃ
                                                                                                                                                                      밁
                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TYPE: DNA
; ORGANISM: H
US-09-919-585-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
US-09-919-585-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 7
LENGTH: 2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Sun, Tian-Qiang
APPLICANT: Feng, Jia-Jia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7, Application US/09919585 Patent No. US20020115167A1
                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: ISOLATION OF DROSOPHILA AND HUMAN POLYNUCLEOTIDES ENCODING PAR TITLE OF INVENTION: POLYNEPTIDES ENCODED BY THE POLYNUCLEOTIDES AND METHODS UTIL TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES FILE REFERENCE: PP-016093.002/200130.525
FILE REFERENCE: PP-016093.002/200130.525
CURRENT APPLICATION NUMBER: US/09/919,585
CURRENT FILING DATE: 2001-07-30
NUMBER OF SE0 ID NOS: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                       196 TIGGAAACTACCGGCTCCTCAAGACCATTGGCAAGGGTAATTTTGCCAAGGTGAAGTTGG
                                                                                                                                                                                                                                                                                                 848 ATGATGAACTAAAGCCTTACGTGGAGCCACTCCCTGACTACAAGGACCCCCGGCGGA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        597 GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                                                                                                                                                                                                                                                          7 Match 8.1%;
Local Similarity 56.4%;
les 472; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG
CCAACATAGTTAAATTATTTGAAGTGATTGAGACTGAGAAAACGCTCTACCTTGTCATGG
                                                                                                                                                                 CCCGACACATCCTGACTGGGAAAGAGGTAGCTGTGAAGATCATTGACAAGACTCAACTGA 315
                                                                                                                                                                                                            GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAG-----GCGGGA 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATTCTACATGTCCACGGACTGTGAAAACCTGCTTAAGAAATTTCTCATTCTTAATCCCA 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAACGGGGCGTCTTCCACATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCC 716
                                                                                ACTCCTCCAGCCTCCAGAAACTATTCCGCGAAGTAAGAATAATGAAGGTTTTGAATCATC
                                                                                                                         CGGAGTCGGTGCTGATGAAGGTGGAGCCGGGAGATCGCCATCCTGAAGCTCATCGAACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGATGGACAGAACCTCAAGGAGCTGCGGGAACGGGTACTGAGGGGGAAAATACCGTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTGGGGGGCTCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATTGCAGACTTTGGCTTCAGCAATGAATTCACCTTTGGGAACAAGCTGGACACCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Feng, Jia-Jia
Reinhard, Christoph
Fantl, Wendy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Williams, Lewis T.
                                                                                                                                                                                                                                                                                                                                          Score 240.6; DB 10; Length Pred. No. 1.4e-46; O; Mismatches 359; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.0
                                                                                                                                                                                                                                                                                                                                                                                       2222;
                                                                                                                                                                                                                                                                                                                                            6,
                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                              375
                                                                                                                           356
                                                                                                                                                                                                                                                       255
                                                                                                                                                                                                                                                                                               236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      776
                                                                                                                                                                                                                                                                                                                                          μ,
```

밁 Ş 밁 Q 밁 δÃ 밁 δÃ 밁 δõ 밁 Qy 밁 δÃ

188

128

177

8

₽ Ş 밁 γ 밁

> 121 315

255 61

```
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
ITILE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
ITILE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 2657
LENGTH: 1539
TYPE: DNA
Arabidonsis thaliana
  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
US-09-938-842A-2657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                           US-09-938-842A-2657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2657, Application US/09938842A Patent No. US20020160378A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                Query Match
                                             Matches
                                                                                                                                             ORGANISM: Arabidopsis thaliana
185 TATCGGCTGGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCAC 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              976 ATGATGAACTAAAGCCTTACGTGGAGCCACTCCCTGACTACAAGGACCCCCGGCGGA 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     951 AACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGGCTAGCCATGCGGA 1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     417
                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAAAGGCTCAGTCTGGAAGCAAATTCAGAAACATCCTTGGTACCTAG------GCGGGA 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGGATGTGTGGAGCCTAGGAGTTATCCTCTATACACTGGTCAGCGGATCCCTGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCC 716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCA 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTCTACATGTCCACGGACTGTGAAAAACCTGCTTAAGAAATTTCTCATTCTTAATCCCA 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGATGGACAGAACCTCAAGGAGCTGCGGGAACGGGTACTGAGGGGAAAATACCGTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCT 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCT 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTATTGTCCATAGAGACTTAAAGGCAGAAAACCTGCTCTTGGATGCTGATATGAACATCA 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAAACAACATCC 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGAGGCTCGAGCCAAATTCCGCCAGATAGTGTCTGCTGTGCAGTACTGTCACCAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACATGC 836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGCAGTCCCCCTTATGCTGCCCCAGAACTCTTCCAGGGCAAAAAATATGATGGACCCG 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATTGCAGACTTTGGCTTCAGCAATGAATTCACCTTTTGGGAACAAGCTGGACACCTTCT
                                         434;
                                           Conservative
                                                            7.6%;
                                         0;
                                       Score 225.4; DB 9;
Pred. No. 4.3e-43;
0; Mismatches 326;
                                         Indels
                                                                              Length
                                         ω
••
                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   855
```

```
; SEQ ID NO 3; LENGTH: 2352; TYPE: DNA TYPE: DNA GORGANISM: Homo sapiens US-09-815-915-3
                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
US-09-815-915-3
; Sequence 3, Application US/09815915
; Patent No. US20020025931A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                              APPLICANT: Millennium Pharmaceuticals, Inc.
APPLICANT: Meyers, Rachel
TITLE OF INVENTION: 3714, 16742, 23546, AND 13887 NOVEL
TITLE OF INVENTION: PROTEIN KINASE MOLECULES AND USES I
FILE REFERENCE: 38155-20006.00
CURRENT APPLICATION NUMBER: US/09/815,915
CURRENT FILING DATE: 2001-03-23
PRIOR APPLICATION NUMBER: US 60/191,846
PRIOR FILING DATE: 2000-03-24
NUMBER OF SEQ ID NOS: 19
                                                                                                            SOFTWARE: FastSEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAGTAACCATCCCTGAGATCCGGCAACACCCTTGGTTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAG 944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATTTATCTCCTGGTGCTAGAGATTTGATCCCCCGGATGCTTGTAGTTGACCCCCATGAAA 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAA 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCAC 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGAT 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCA 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTCACAGAGACCTCAAGCCTGAAAACTTGCTTTTGGACTCTAAATGCAATGTAAAGATT 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATC 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCATCCGTCTCTATGAGGTTATAGAGACTCCCACAGATATTTATCTTGTCATGGAGTAT 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCAC 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGATGGAGGAGAAAGTGAGGAGAGAGATCAAAATCTTGAGACTATTTATGCATCCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCACAT 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATTGACAGGACATAAGGTTGCTATCAAGATCCTCAATCGTCGCAAAAATCAAGAACATG 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACAAGCTTGGGAGAACTCTTGGTATTGGTTCCTTTGGTAGGGTGAAGATAGCTGAGCAT 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGTCTGGAGCTGTGGTGATACTCTACGCTCTTCTCTGTGGGACGCTTCCATTTGAT 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTCCAAATTATGCCGCTCCAGAGGTAATTTCGGGCCAAGTTATATGCTGGCCCTGAAGTA 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGATTTTGGCCTGAGCAACATAATGCGAGATGGTCATTTTTTGAAGACAAGTTGTGGA 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGG 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATT 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGAGGAACTTTTTTCAGCAGATAATATCAGGAGTGGAATACTGCCATCGAAACATGGTG 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAG 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGA---G 301
                                                                                                              for Windows Version 4.0
                                                                                                                                                                                                                                                              THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           234
```

\ \ !

δÃ 밁 Ş 밁 õ

δ

```
Sequence 1, Application US/09815915
Patent No. US20020025931A1
GENERAL INFORMATION:
APPLICANT: Millennium Pharmaceuticals, Inc.
APPLICANT: Meyers, Rachel
TITLE OF INVENTION: 3714, 16742, 23546, AND 13887 NOVEL
TITLE OF INVENTION: PROTEIN KINASE MOLECULES AND USES T
FILE REFERENCE: 38155-20006.00
CURRENT APPLICATION NUMBER: US/09/815,915
                                 THEREFOR
                                                                                                                                                                                                                                  966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                             915
                                                                                                                                                                                                                                                                                                                                                                                                                                                  629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                                                                                                                809
                                                                                                                                                                                                                                                                                                                         749
                                                                                                                                                                                                                                                                                                                                                                                      689
                                                                                                                                                                                                                                                                                                                                                                                                                  795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; LOCATION: (140)...(2491); NAME/KEY: misc_feature; LOCATION: (1)...(2968); OTHER INFORMATION: n = A,T,C US-09-815-915-1
                   밁
                                                                             멍
                                                                                                       Ş
                                                                                                                                      В
                                                                                                                                                                    Š
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                               δã
                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT FILING DATE: 2001-03-23
PRIOR APPLICATION NUMBER: US 60/191,8
PRIOR FILING DATE: 2000-03-24
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Si
Matches 450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENGTH: 2968
                   688
                                                                                                                                        769
                                                                                                                                                                                                    709
                                                                                                                                                                                                                                  676
                                                                                                                                                                                                                                                               649
                                                                                                                                                                                                                                                                                                                           589
                                                                                                                                                                                                                                                                                                                                                                                      529
                                                                                                                                                                                                                                                                                                                                                                                                                  496
                                                                                                                                                                                                                                                                                                                                                                                                                                                  469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 7.4%;
Local Similarity 54.2%;
                                 GTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTG
                                                                                                                                                                                                                                                                                ARTGTTTGATTATTTGACTTCCAACGGGCACCTGAGTGAGAACGAGGCGCGGGAAGAAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGGTCCACTGCATCACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCCGCGGGCCAGGGCCAGGCCAGGACACCCTCCGGGTGTTTTTACGACATCGA 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCCCACCCCACCCCACCCCAGCAGCAGATATGTGGGCCCCTATCGGCTGGA 195
               CTGTGAGAGCCTGATCCGCCGCATGCTGGTGGTGGACCCCGCCAGGCGCATCACCATCGC
                                                                            GACGCTGAGACAGCGGGTGCTGGAGGGCCGCTTCCGCATCCCCTTCTTCATGTCTCAAGA
                                                                                                                                        GGGCGTGGTGCTGTACGTCCTGGGTCTGCCGCTTCGCCCTTCGATGGGCCTAACCTGCC
                                                                                                                                                                    TGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTTGCCCTTTGATGACGACAACCTCCG
                                                                                                                                                                                                  CGCCCCGGAAGTCTTTGAGGGGAAGGAGTATGAAGGCCCCCCAGCTGGACATCTGGAGCCT
                                                                                                                                                                                                                                                               TGGGAATTTCTACAAGTCAGGAGAGCCTCTGTCCACGTGGTGTGGGAGCCCCCCGTATGC
                                                                                                                                                                                                                                                                                                                                                                                  CTGGCAAATCCTGTCGGCCGTGGAGTACTGTCACGACCATCACATCGTCCACCGGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                  CCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTATTCGACTACCTGGTAAAGAAGGGGGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGACGTCTACGAGAACAAGAAATATTTGTACCTGGGTTCTGGAGCACGTCTCGGGGGGTGA 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATCTATCGTGAGGTTCAGCTGATGAAGCTTCTGAACCATCCACACATCATAAAGCTTTA 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACGCAGGTTGCAATAAAAATAATTGATAAAACACGATTAGATTCAAGCAATTTGGAGAA 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAA 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGACCCTGGGCAAAGGCAACTTCGCGGTGGTGAAGCTGGCGGCGGCATCGAGTCACCAA 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGGTTATGGAAACAAAGGACATGCTTTACATCGTCACTGAATTTGCTAAAAATGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60/191,846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 221.4; DB 10;
Pred. No. 4.9e-42;
0; Mismatches 381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2968;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                      828
                                                                                                                                                                    795
                                                                                                                                                                                                  768
                                                                                                                                                                                                                                 735
                                                                                                                                                                                                                                                               708
                                                                                                                                                                                                                                                                                           675
                                                                                                                                                                                                                                                                                                                        648
                                                                                                                                                                                                                                                                                                                                                      615
                                                                                                                                                                                                                                                                                                                                                                                    588
                                                                                                                                                                                                                                                                                                                                                                                                                 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
```

RESULT 13 US-09-815-915-1

õ

Š

δÃ

δÃ

966

1;

```
SEQ ID NO 5086
; LENGTH: 275
; TYPE: DNA
; ORGANISM: Bos taurus
; OTHER INFORMATION: Clone ID: 22-LIB3058-032-Q1-K1-F5
US-09-960-352-5086
                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
US-09-799-875-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
US-09-960-352-5086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Meyers, Rachel
APPLICANT: Kapeller-Libermann, Rosana
APPLICANT: Williamson, Mark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5086, Application US/09960352 Patent No. US20020137139A1
SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 4 LENGTH: 5983
                                                                                                                                                                                                                                                                                                                                            Sequence 4, Application US/09799875 Patent No. US20020034780A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Warren, Wesley C.
APPLICANT: Tao, Nengbing
APPLICANT: Byatt, John C.
APPLICANT: Byatt, John C.
APPLICANT: Mathialagan, Nagappan
TITLE OF INVENTION: NUCLEIC ACID AND OTHER MOLECULES ASSOCIATED WITH LACTATION AND
TITLE OF INVENTION: MUSCLE AND FAT DEPOSITION
FILE REFERENCE: 16511.006/37-21(10298)C
CURRENT APPLICATION NUMBER: US/09/960,352
CURRENT FILING DATE: 2001-99-24
NUMBER OF SEQ ID NOS: 15112
                                                      TITLE OF INVENTION: NO. US20020034780A1el Human Protein TITLE OF INVENTION: Therefor ETLE REFERENCE: 35800/20996 CURRENT APPLICATION NUMBER: US/09/799,875 CURRENT FILING DATE: 2001-03-06 PRIOR APPLICATION NUMBER: 60/182,059 PRIOR FILING DATE: 2000-02-11 PRIOR FILING DATE: 2000-02-11 PRIOR APPLICATION NUMBER: 09/659,287 PRIOR FILING DATE: 2000-09-12 NUMBER: 05 E0 ID NOS: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1181 GACCAGGACCTGCCT 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     949 CCAGATCCGGCAGCACCGGTGGATGCGGGCTGAGCCCTGCTTGCCGGGACC 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGAGAAC 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGGCTGCTTCAGGGACCGCGAGCGGCTGCACCGGGAGCTGCGCAGTGAGGAGGAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGAGAAGATGATATACTACCTGCTTTTGGATCGGAAGGAGCGGTACCCTATCTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7.2%; Score 215; DB 10; 90.2%; Pred. No. 5.6e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 275;
                                                                                                                                                                                                                                          Kinases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1180
                                                                                                                                                                                                                                        Uses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
, Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ν
                                                                                                  S
                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                               QΨ
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                        Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; NAME/KEY: CDS
; LOCATION: (115)...(3723)
US-09-799-875-4
                                                                   밁
                                                                                                                                         밁
                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 6.9%;
Best Local Similarity 53.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                   722
                                                                                                                                                                                                                                                                                                                                                    613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             493
                                                                   853
                                                                                                                                                                        842
                                                                                                                                                                                                           733
                                                                                                                                                                                                                                                                                673
                                                                                                                                                                                                                                                                                                                                                                                                                        553
                                                                                                                                                                                                                                                                                                                                                                                                                                                           602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         542 TGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATT 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302
913
                                                                                                      902
                                                                                                                                       793
                                                                                                                                                                                                                                              782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242 CACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133 TACTACGAGATCGACCGCACCATCGGCAAGGGCCAACTTCGCGGTGGTCAAGCGGGCCACG 192
                                962 GAC 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       122 CCCGCCTACCACCTCCCCCACCCCACCCCACCCCAGCACGCCCAATATGTGGGC 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAC
                                                                                                                                                                                                                                                                                                 GACATGTGGAGCTGTGGGAGTCATCCTCTTCGCCCTGCTGGTGGGGGCTCTGCCCTTTGAT 781
                                                                                                                                                                                                                                                                                                                                                AGCCCTCCCTATGCTGCACCTGAACTCTTTGAAGGAAAAGAATATGATGGGCCCAAAGTG
                                                                                                                                                                                                                                                                                                                                                                          TCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCA 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCATCGTGATTTAAAAAGCTGAAAATTTACTTCTGGATGCCAATCTGAATATCAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCAC
                                                                 CGCCTCTCCATGGAGCAGATCTGCAAGCACAAGTGGATGAAGCTAGGGGACGCCGATCCC
                                                                                                 AGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCA 961
                                                                                                                                                                      TTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGCCCGAAAAA 901
                                                                                                                                                                                                         GGAAGCACACTGCAGAATCTGCGGGCCCGCGTGCTGAGTGGAAAGTTCCGCATCCCATTT 792
                                                                                                                                                                                                                                            GACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCAC
                                                                                                                                                                                                                                                                                GACATCTGGAGCCTTGGAGTTGTCCTCTACGTGCTTGTGTGCGGTGCCCTGCCATTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGATTTTGGTTTCAGTAACCTCTTCACTCCTGGGCAGCTGCTGAAGACCTGGTGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCACGTCGGAAGTTCAAACAGATCGTCACAGCTGTCTATTTTTGTCACTGTCGGAACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTAGTGGAGGGGAAATATTTGACCACCTGGTGGCCCATGGTAGAATGGCAGAAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCATCAGGCTCTACCAGGTTATGGAGACAGAACGGATGATTTATCTGGTGACAGAATAT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAACTTGAAGAAGATTTTCCGGGAAGTTCAAATTATGAAGATGCTTTGCCACCCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCACAT 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCTCGTCACCAAGGCCAAGGTTGCTATCAAGATCATAGATAAGACCCAGCTGGATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 452;
                                                                                                                                     TTTATGTCCACAGAATGTGAGCATTTGATCCGCCATATGTTGGTGTTAGATCCCAATAAG
915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 207; DB 10;
Pred. No. 1.6e-38;
0; Mismatches 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 5983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                 912
                                                                                                                                     852
                                                                                                                                                                                                                                                                             732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  252
                                                                                                                                                                                                                                                                                                                                                  672
                                                                                                                                                                                                                                                                                                                                                                                                                      612
                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            312
```

completed: April 22,

2003, 03:03:27

Job time : 205.254 secs

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
        22643211843111321109
22643211843111321109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
BG
     seq length: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Issued_Patents_NA:*
1: /cgn2_6/ptodata/1
2: /cgn2_6/ptodata/1
3: /cgn2_6/ptodata/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        April 21, 2003, 20:17:06; Search time 68.9763 Seconds (without alignments) 13249.433 Million cell upda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-003-690-1
2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    441362 seqs, 153338381 residues
     gtcgacccacgcgtccgcgg.....aaaaaaaagggcggccgcta 2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
/cgn2_6/ptodata/1/ina/5B_COMB.seq:*
/cgn2_6/ptodata/1/ina/6B_COMB.seq:*
/cgn2_6/ptodata/1/ina/6B_COMB.seq:*
/cgn2_6/ptodata/1/ina/BCTUS_COMB.seq:*
/cgn2_6/ptodata/1/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
        29064
11647
117429
117361
127652
127652
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12767
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DΒ
                                                                          US-09-930-181-1
US-09-930-181-3
US-09-930-161-4
US-09-930-161-4
US-09-930-161-4
US-08-557-006C-38
US-08-557-006C-34
US-08-557-006C-37
US-08-557-006C-44
US-08-557-006C-44
US-08-557-006C-44
US-08-557-006C-44
US-09-186-277-3
US-09-186-277-3
US-09-186-277-3
US-09-186-277-4
US-09-186-277-4
US-09-186-277-4
US-09-186-277-4
US-09-186-277-3
US-09-186-277-3
US-09-186-277-3
US-09-186-277-3
US-09-186-277-3
US-09-186-277-3
US-09-186-277-3
US-09-187-322-3
US-09-187-322-3
US-09-187-322-3
US-09-187-322-3
US-09-187-322-3
  US-08-913-050A-2
US-08-755-728-1
US-08-974-655-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   882724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                     Sequence
Sequence
                                                                                                                                                         Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
                                                                                                                                                                                                                                   Sequence
Sequence
                                                 Sequence
                                                                                  Sequence
                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4, Appli
38, Appl
39, Appl
24, Appl
37, Appl
37, Appl
5, Appli
3, Appli
3, Appli
4, Appli
4, Appli
4, Appli
1, 
                                                                                                                                                                                                                                                                                                                                                                                                                        Appli
, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Appli
Appli
Appli
```

				•					
7	Оy	Qy Db	ob dy	Qу рь	Qy Db	Que Bes Mat	RESULTUS-099 FARMENTAL SEQUENCE OF THE FILL SEQUENC		
,	459 434	14 99 74	279 254	219 194	159 134	았	-991		60000000000000000000000000000000000000
	AGGGGA               AGGGGA	TGAAGC ATTTGT	TGAACC	CAGGGC        CAGGTC	cccagc          cgcagc	Match ocal Simi			99 9999 999999999999999999999999999999
	GACTGA        GGCTGA	TCATTG ACCTGG	GGGAGA        GTGAGA	TGGTTA        TGGTGA	ACGCCC        ACGCGC	ilarity Conser			
	AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGG		TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC	CAGGGCTGGTTAAACTCGGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 	CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGAC 	32 70 vativ	lon US Pechno Full- 101 V 101 V 101 V 108 : 18 200 S: 18 7ersio		1244 4162 4162 4162 4165 4165 4165 2104 2106 2106 1282 5886 1282 3926 1282 3926 1466 1282 1962
1	AGGA      AGGA	CCCA AGCA AACA	CACAC	GGGT	TGGG	(D	;/099301 logies logies Length Length 11-08-16 01-08-16		423341442424424444
	36CCC	CGTCT	TOTOGO	CACT	1000T	Score Pred. 0; Mis	01 16	ъ	0 - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O - 8 D O O - 8 D O O - 8 D O O - 8 D O O - 8 D O O - 8 D O O - 8 D O O O - 8 D O O O - 8 D O O O - 8 D O O O O O O O O O O O O O O O O O O
	GAAA         GGAA	TAAA CGGG	TGCT	GCAT	ATCG ACCG	re 96 d. No Misma	81 Serine 9/930,	ALIGNMENTS	-09-283-011-1 -08-459-448-2 -08-459-5048-2 -08-459-5048-2 -08-459-5048-2 -08-459-5048-2 -09-547-422-26 -09-51-715A-2 -09-800-960-1 -09-801-907-3 -08-871-097-3 -08-871-715-1 -09-772-796-12 -09-772-796-12 -09-770-170-1 -08-924-183-4
	GTTCI	GCTGC	GATGA	CACGG       CACCI	GCTGG	966.6; No. 4.: smatches	Prote	MENTS	3-011 3-448 3-595 3-930 7-422 7-422 7-423 7-960 7-
	TCCG	ACGA SAGCT	VAGGT	GTCA	AGAA AGAA	DB 3e-19	. in	•	A-112 A-256 A-126 A-266 A-127 A-27 A
	CCAGI      GCAGI	ATTC	GGAG	GAAGO       GAAGO	GACGO GACGO	4; 92; 39;	Kinas		
	ATTGT	TATGA	CGGGA	STCGC	TIGGG TIGGG	Length Indels	e in		
	GICIO	AAACA CCTGC	GATC	CATC	CAAA(	th	Вга		sequence seq sequence sequence sequence sequence sequence sequence sequence sequence
	CGCT	TAAAA TAAAA TAAAA	SCCAT	VAGAT           VAGAT	GACAG	2908; 195;	in and		Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence
1	וט 4				₽ - B	Gap	d Panc		4.415, 125 4.415, 125 4.415
,	18	373 458 433	338 313	278 <sub>.</sub> 253	18	Ω	ncrea		Appli Appl Appl Appl Appl Appl Appli
						6	Ω m		

δÃ

519 ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGG 578

```
ZQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₿
                                                               ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (482)..(2239)
US-09-930-181-3
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                           RESULT 2
US-09-930-181-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                        SEQ ID NO 3
LENGTH: 3364
TYPE: DNA
ORGANISM: Homo s
                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: OriGene Technologies
TITLE OF INVENTION: Full-Length Serine Protein Kinase in Brain and Pancreas
FILE REFERENCE: 16U 101 V1
                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                           Sequence 3, Application US/09930181 Patent No. 6455292
    Matches 1484;
                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/930,181
CURRENT FILING DATE: 2001-08-16
NUMBER OF SEQ ID NOS: 18
                                                                                                                                                                                      SOFTWARE: PatentIn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1979
                                                                                                                                                                                                                                                                                                                                                                                                                                   2259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1719
                                                                                                                                                                                                                                                                                                                                                                                                     2039 TGTCAGACACCACTAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1432
                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCCAGCACT 2038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC 2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAACAAATATITCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGAGAACATCG 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCAGACGAGAAGAACGG 2277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGGCATCTACTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGG 1978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCACGCCTTCCTGTCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCAAACGAGCTTCC 1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAG 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGGGGTGCCCTGGAGGGCGCGCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCC 1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAGAGCCCGGCTGGCACGCCCAACCCCACGCCCCGTCCAGCCCC-----AGCGTCG 1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCCGAGTACAAGGCCACGGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTTCCACCGCCGGAAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAG 1636
    Conservative
                                                                                                                          sapiens
                                                                                                                                                                                       version 3.0
              31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                     2057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----ACCCCCAAGGGGACACCTGTCCACACGCCAA 1462
   0;
Score 951; DB 4; I
Pred. No. 7.9e-189;
0; Mismatches 440;
                              Length 3364;
 Indels 199;
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1696
 7;
```

159	GIRGGGGGCCCCCCAGTGCCCCCAGTGCCCGCTCCAGACCCCTGCCCGGCCC	1392
ı ü		5 L
ن ز		. ۾
139	CAGCAGCCCCCG	1479
147	AGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGG	41
137	ACGGCCAGAGGTCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTCCACCAGCCCAC	1319
141	GCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC	1359
135	TGACGGACGGCGCTCCCCGGTGCCTGCGGGCCATTGAGATGGCCC	1268
i io	GATGCTGAACCGGCACGGCAAGCGGCGGCCAGAACGCAAGTCCATGGAGGTGCTCAGCG	20
129	ATGCTGAGCCGTCACGGGAAGCGGCGACAGAGCGGAAGTCCATGGAAGTCCTGAGCA	23
123 120	AGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC:	1148
114	CAGGAGAAGATGATTTACTTCCTCCTGGACCGGAAAGAAA	80
117	AGCGGTATCCCAGCTGTG	1119
111 108	CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAA	1059 1028
102	GCTGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT	
105	CTGCCATCCAACGGAGGCTGGACCCCGACGTCCTAGAGAGAG	999
998 967	ACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCC	939 914
938 913	TGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT	879 854
878 853	GGGGCGTGTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA	794
793	TGGTGGGGGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAAGGTGAAGC	734
818	TGGGGGTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC	759
733	AGAAGTATGACGGCCGGAAGGCGGACGTGTGGAGCTGTGGCCTTGCCCTTCGCCCTTGC	674
1		600
698 673	GCCTCCTGGAGACCAGCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG	639 614
613	ACGAGAAGAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACA	554
638	ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA	579
553	ACTTCTGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGG	494

S

문

04 04 04 04 04 04 04 04 04 04 04

40 40 40 40 40 40 40

1599 CCCCAGGCTCCCCCCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1658

δõ

159 CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 218

1294	235 TCTCCCATGCTGAGCCGTCACGGGAAGCGGGACCAGGAGCGGGAAGTCCATGGAAGTCCTG	0у 1
123 <b>4</b> 1330	.175 TGTGAGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCC	Qу 1 рь 1
1174 1270	115 GAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGC	Qу 1 ДЬ 1
1114 1210	.055 GCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAG	Qy 1
1054 1150	995 GTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATG	Оу ВЬ 1
	35 TGGTACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCC	Qy Db 1
934 1036	875 GGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCT 	Db Qy
87 <b>4</b> 976	7 5 2 - 2	Db Qy
814 916	7	g gy
75 <b>4</b> 856	695 GGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCC	D Qy
694 796	635 GACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAG	Qу
634 736	575 TTGGATGAGAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGG	р
574 676	515 CTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTT	Qy Б
514 616	455 AAGAAGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGC	Qу Db
454 556	399 ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGGGG	Qy
398 496	339 TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT	Qу
338 436	279 TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC	Оу
278 376	219 CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG	g d
316		В

2255 GCCTGGCAGACGAGAAGAACGG 2277 	Фу
2195 CGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAG 2254 .	Ωу
2135 GGTGGTGGCATCTACTCCGTCACCTTCACTCTCAGGCTCCAGGCCGTCGGTTCAAG 2194	pb Qy
2075 CAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGA 2134	Оу
2015 TTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTC 2074	Оу
1955 ATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGC 2014	Qy Oy
1895 ANAGAAGAACAANTATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGAC 1954 	dd Qy
1835 CCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGAC 1894	рь
1775 CCTCGCTTTCACCGGGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACG 1834	DP QA
1715 GTCGGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCC 1774	Qу Дъ
1655 CCCCGGGCCAGTCCCACCGGGGACACCACACACACCCCCAGCCCCGGGGGTGGC 1714	ДУ
1595 GGCCCCCAGGCTCCCCGCGCTCCTCTGGCGGACCCCCTTGCACTCGCCTCTGCACACG 1654	Db Qy
1535 AGGGTTGGGGGCCCGGGGAGCAGCCCCCGCCCCCAGTGCCCCCCCC	рь
- 1	, Db
1475 GAGGCTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCC 1534	Qy
1415 CCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGGCTGGAGAT 1474	Ф
1355 GCCCAGCACAGCCAGAGATCCCGTAGCGTCCAGTGGAGCCTCCACGGGTCTGTCCTCCAGC 1414	Оy
1295 AGCATCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCACCC	DB 03
331 TCCCCGATGCTGAACCGGCACGGCAAGCGGCCGCCAGAACGCAAATCCATGGAGGTGCTC	뫄

RESULT 3 US-09-101-146-44

Sequence 44, Application US/09101146 Patent No. 6124125

GENERAL INFORMATION:

APPLICANT: APPLICANT:

APPLICANT: Medical Research, TITLE OF INVENTION: No. 6124

CORRESPONDENCE ADDRESS:

E: Jane Massey Licata, 66 E. Main Street

NUMBER OF SEQUENCES:

```
υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
    457
                                                                                                                                                                                                                                                                                                                                              217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QV
  닭
                                       Ş
                                                                                      밁
                                                                                                                       ρ
                                                                                                                                                                      밁
                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-359-161-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-359-161-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4, Applic Patent No. 6342656
                                                                                                                                                                                                                                                                                                                                              Matches 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Gee, Oliver
APPLICANT: The Regents of the University of California
TITLE OF INVENTION: Regulation of Source-Sink Relationships and Responses
TITLE OF INVENTION: to Stress Conditions in Plants
FILE REFERENCE: 023070-095900US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Bradford, Kent J.
APPLICANT: Dahal, Peetambar
APPLICANT: Yang, Hong
APPLICANT: Cooley, Michael
APPLICANT: Downie, Bruce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/359,161A CURRENT FILING DATE: 1999-07-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 7 SOFTWARE: Patentin Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 1929
TYPE: DNA
ORGANISM: Lycopersicon esculentum
                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: Lycopersicon esculentum plant homolog of yeast OTHER INFORMATION: SNrl kinase subunit of protein kinase (LeSNrl)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                       344 CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG 403
                                                                                                                                                                                                                                                                                                758
249 TIGTTCATGCATCCTCATATTATACGGCTTTATGAGGTCATAGAGACACCATCAGATATA
                                                                                                                                                                                                              227 GTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGG 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   458
                                                                                                                       287 GAGAAGCTGTCGGAGTCGG----TGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                            69
                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC 893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTGGGGGCTCTGC
                                                                                 CGAAAAATCAGGAATATGGACATGGAGGAGAAAGTCCGTAGAGAAATCAAAATATTGAGA
                                                                                                                                                                   GTTAAAATAGCTGAACATACGTTAACAGGGCACAAAGTTGCTGTCAAGATTCTTAATCGT 188
                                                                                                                                                                                                                                                        GACTCATTTTTACGGAACTATAAACTCGGGAAAACACTTGGCATTGGATCGTTCGGCAAA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTATGAAGAGGGCCACAATAAAAGATATCAGGGAACATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACA 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAAGTAGACATCTGGAGCAGCGGGGTCATTCTCTATGCTTTGCTGTGGGAACTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCC 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAAGATAGCCGACTTCGGTCTTTCAAACATGATGTCAGATGGTGAATTTTTAAGAACGA 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCCTCAGTATTTGAATCCCTCTGTAATAAGCCTTTTGAAGCATATGCTGCAGGTAGATC 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTTTGATGATGACCACGTGCCAACTCTTTTTAAGAAGATATGTGACGGGATATTTTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGTGGCTCGCCCAATTATGCTGCACCAGAAGTAATTTCAGGAAGATTCTACGCAGGCC 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09359161A
                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                  54.48;
                                                                                                                                                                                                                                                                                                                                                                                    6.7%;
                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                Score 200.2; DB '
                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                  DB 4;
                                                                                                                                                                                                                                                                                                                                          353;
                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    802
                                                                                                                                                                                                                                                                                                                                       υ
•
                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        637
                                                                                 248
                                                                                                                         343
                                                                                                                                                                                                                                                                                                226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  773
                                                                                                                                                                                                                                                                                                                                       1;
```

474 CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 533 398 ATATGGTGGTCCACAGAGATTTGAAACCTGAAAACGTCCTGCTTGATGCACACATGAATG 534 ACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA 593 158 GAAGCCTGGACGTGGTCGGGAAAATCCGCAGAGAGATCCAGAACCTGAAGCTTTTCAGGC 278 TGGAATATGTCTCAGGAGGAGAGCTATTTGATTATATCTGTAAAAATGGAAGGTTGGACG 337 354 ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 413 237 GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296 APPLICATION NUMBER: US/09/101,146 FILING DATE: October 7, 1998 CLASSIFICATION: 435 OPERATING SYSTEM: WINDOWS 95 SOFTWARE: WORDPERFECT 6.0 FOR WINDOWS AAAAGGAGAGTCGACGTCTGTTCCAGCAGATCCTTTCTGGTGTGGACTATTGTCACAGGC TGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGC 473 ACCCTCATATAATCAAACTGTACCAGGTCATCAGTACACCGTCTGATATTTTCATGGTCA 277 CGGAGTCGGTGCTGAT---GAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 353 GCAAGCACGAGTTGACTGGACATAAAGTTGCTGTGAAGATACTCAACCGGCAGAAGATTC 157 TCGGCCACTACATCCTGGGGGACACGCTGGGCGTCGGCACCTTCGGGAAAGTGAAGGTGG 97 Dartmouth College, St. Vincents Institute of Medical Research, Kemp et al.
VENTION: No. 6124125el AMP Activated Protein DISKETTE, 3.5 INCH, 1.44 Mb STORAGE Score 206.6; DB 3; Pred. No. 4e-34; Mismatches AMP Activated Protein Kinase 339; Indels Length 1647;

; ANTI-SENSE: US-09-101-146-44

TOPOLOGY: STRANDEDNESS:

Linear

Single

TELEFAX: (856) 810-14 INFORMATION FOR SEQ ID NO:

TELEPHONE:

(856) 810-1515

810-1454

TELECOMMUNICATION INFORMATION:

REFERENCE/DOCKET NUMBER:

32,257 DC-0050

SEQUENCE CHARACTERISTICS:

1647

ENGTH:

Nucleic acid

APPLICATION NUMBER: PN74:
FILING DATE: 8 JAN 1996
ATTORNEY/AGENT INFORMATION:
NAME: Jane Massey Licata
REGISTRATION NUMBER: 32,

PRIOR APPLICATION DATA:

PN7450

SOFTWARE: WORDPERFECT CURRENT APPLICATION DATA:

COMPUTER READABLE FORM: MEDIUM TYPE: DISKETT

IBM PC

ZIP: 08053 COUNTRY: CITY: Marlton STREET: ADDRESSEE:

Z

USA

Query Match Best Local Similarity Matches 423;

6.9**8**;

Conservative

0

98

38

δõ ₽ Ş . B δÃ 뫄 Q 밁 Ωy 밁 Ş Бр δĀ

414

밁

```
ş
                                                                                                    ; TYPE: DNA
; ORGANISM: Human AMP protein kinase
US-08-557-006C-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-557-006C-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                SOFTWARE: Pate
SEQ ID NO 38
LENGTH: 1742
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 38, Application US/08557006C Patent No. 6258547
                                  Matches
                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                       FILE REFERENCE: NGAP/PHM37580/UST
CURRENT APPLICATION NUMBER: US/08/557,006C
CURRENT FILING DATE: 1996-03-06
PRIOR APPLICATION NUMBER: PCT/GB94/01093
PRIOR TILING DATE: 1994-05-20
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR EILING DATE: 1993-05-21
PRIOR FILING DATE: 1993-05-21
                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Beri, Rajindar K.
APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NGAP/PHM37588/UST
                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: GB PRIOR FILING DATE: 1993-08-31
                                                                                                                                                                                                        NUMBER OF SEQ ID NOS:
 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAGTCGACCCAATGAAGCGAATGACTATTCCTGAGATTCGCCTGCACCCTTGGTTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACCTGGTTCTGGAGCACGTCTCGGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGAGGGG 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA 943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G 944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATATACTCTGCCCAGCCATTTATCAGCTGGTGCGAGGGATTTGATTCCGAGGATGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCACCCTTCCGTTTGACGATGAAAACATACCCAATCTTTTAAGAAAATAAAGGGTGGA 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATGCTGGCCCTGAGGTAGATGTATGGAGCTGTGTGTTATTCTTTATGCTCTTCTCTGT 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGAAGACAAGTTGCGGAAGCCCAAACTATGCTGCCCCCAGAGGTTATATCAGGTAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATGGAATGTGAAGATCGCAGATTTTGGTTTGAGCAATATCATGCGCGATGGTCATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATTGCAGGAGGATGAAGCTCGTAACTTTTTTCAGCAGATAATTTCTGGTGTGGAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACTGACGCCCAAGGACGCCCGAAAGTTCTTCCGCCAGATTGTCTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGTTGTGATGGAGTATGTGAAATCTGGCGAGTTATTTGATTACATTGTTGAGAAGGGC
                                  418;
                                                                                                                                                                                         PatentIn Ver.
                                Conservative
                                                 6.7%;
54.6%;
                                                                                                                                                                                                            44
                                                                                                                                                                                                                                         GB 9318010.7
                              Score 198.6;
Pred. No. 1.9e
0; Mismatches
                              0
                       1.9e-32;
ches 344; Indels
                                                             DB 4;
                                                                 Length
                              ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             368
```

```
Дg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                          RESULT 6
US-08-557-006C-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
NUMBER OF SEQ ID NOS: 4. SOFTWARE: PatentIn Ver. SEQ ID NO 39
                                         APPLICANT: Berl, Rajindar K.
APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
APPLICANT: Forder, Robert A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NGAP/PHM37588/UST
CURRENT ETLING DATE: 1996-03-06
PRIOR APPLICATION NUMBER: DS/08/557,006C
CURRENT FILING DATE: 1994-05-20
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR APPLICATION NUMBER: GB 9318010.7
PRIOR FILING DATE: 1993-05-21
PRIOR FILING DATE: 1993-08-31
PRIOR FILING DATE: 1993-08-31
                                                                                                                                                                                                                                                                                                                                                   Sequence 39, Application US/08557006C Patent No. 6258547
                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   894 CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       534 ACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       594 TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTTCGACGATGAGCACGTGCCTACGCTCTTTAAGAAGATCCGAGGGGGTGTGTTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCCGGAGTATCTCAACCGTTCTATTGCCACTCTGCTGATGCACATGCTGCAGGTGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGTGGATCGCCAAATTATGCAGCACCGGAGGTCATCTCAGGAAGGCTGTATGCGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAAGATAGCTGACTTCGGACTCTCTAATATGATGTCAGATGGTGAATTTCTACGAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGTGGAAGCTCGCCGGCTCTTCCAGCAGATTCTGTCTGCCGTGGACTACTGTCACAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAATATGTGTCTGGAGGTGAATTGTTCGACTACATCTGTAAACACGGGAGGGTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATGGTTGTCCACAGGGACCTGAAGCCAGAGAACGTGTTGCTGGACGCCCAGATGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCCTCATATTATCAAACTCTACCAAGTGATCAGCACTCCAACAGACTTTTTTATGGTAA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGTTTAGATGTTGGGAAAAATAAAACGAGAAATTCAAAATCTTAAACTCTTTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGAGT----CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGAACATCAATTGACAGGCCATAAAGTGGCAGTTAAGATCTTAAATAGACAGAAGATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGGACACTACGTGCTGGGGGACACCCTGGGCGTCGGCACCTTCGGCAAAGTGAAGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  217
```

1;

; NAME/KEY: gene; LOCATION: (1)..(1747); OTHER INFORMATION: Full length cDNA sequence fragment of Human AMPK; OTHER INFORMATION: fragment begins at nucleotide 24 and ends with; OTHER INFORMATION: nuclotide 1765
US-08-557-006C-39 밁 δÃ 밁 Ş 밁 δÃ 밁 δÃ 밁 Š 멂 δ 밁 Ş 맑 Š 밁 Ş В δÃ 밁 δÃ 밁 Š Query Match 6.7%; Best Local Similarity 54.6%; Matches 418; Conservative ORGANISM: Rat LENGTH: 2652 765 894 705 645 774 585 714 525 654 465 594 405 534 345 474 285 414 225 354 165 105 237 45 GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTGGTGGGGGGCTCTGC 773 TGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAAGACTGACGC DNA CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938 CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 833 GCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCC 713 CTAAGATAGCTGACTTCGGACTCTCTAATATGATGTCAGATGGTGAATTTCTACGAACTA AGGTGGAAGCTCGCCGGCTCTTCCAGCAGATTCTGTCTGCCGTGGACTACTGTCACAGGC CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 533 GCAGTTTAGATGTTGTTGGAAAAATAAAACGAGAAATTCAAAATCTTAAACTCTTTCGTC 224 GAGAACATCAATTGACAGGCCATAAAGTGGCAGTTAAGATCTTAAATAGACAGAAGATTC 164 GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296 CCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT TCCCGGAGTATCTCAACCGTTCTATTGCCACTCTGCTGATGCACATGCTGCAGGTGGACC TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC 893 CGTTCGACGATGAGCACGTGCCTACGCTCTTTAAGAAGATCCGAGGGGGGTGTGTTCTACA CTGAGGTTGATATCTGGAGCTGTGGTGTTATCCTGTATGCCCTTCTCTGTGGCACCCTCC GCTGTGGATCGCCAAATTATGCAGCACCGGAGGTCATCTCAGGAAGGCTGTATGCGGGTC TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 653 ACATGGTTGTCCACAGGGACCTGAAGCCAGAGAACGTGTTGCTGGACGCCCAGATGAATG 464 ACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA 593 TGGAATATGTGTCTGGAGGTGAATTGTTCGACTACATCTGTAAACACGGGAGGGTTGAAG ATCCTCATATTATCAAACTCTACCAAGTGATCAGCACTCCAACAGACTTTTTTATGGTAA 284 ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 413 CGGAGT---CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 353 0; Score 198.6; DB 4; Pred. No. 2.2e-32; 0; Mismatches 344; Length Indels 809 u. 584 473 524 404 704 644

RESULT 7
US-08-557-006C-24
; Sequence 24, Application US/08557006C
; Patent No. 6258547
; GENERAL INFORMATION:

\ \ \ !

```
RESULT 8 US-08-557-006C-37 US-08-557-006C-37, Application US/08557006C; Patent No. 6258547
  밁
                                        Ş
                                                                                          맑
                                                                                                                           Q
                                                                                                                                                                               밁
                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-557-006C-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Pate
SEQ ID NO 37
LENGTH: 1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
APPLICANT: Forder, Robert A.
APPLICANT: Forder, Robert A.
APPLICANT: FORDER: ROCCEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NGAP/PHM37588/UST
CURRENT APPLICATION NUMBER: US/08/557,006C
CURRENT FILING DATE: 1996-03-06
PRIOR APPLICATION NUMBER: PCT/CB94/01093
PRIOR FILING DATE: 1994-05-20
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR APPLICATION NUMBER: GB 931010.7
PRIOR FILING DATE: 1993-08-31
PRIOR FILING DATE: 1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: Description of Artificial Sequence: Rat liver AMP OTHER INFORMATION: protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                      414
                                                                                                                                                                                                                                                                                                                                                                    218
                                                                                                                                                                                                                                                                                                                                                                                                              354
                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match 6.1%;
Local Similarity 53.3%;
                                                                                                                                                                                                                          CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTTGGACTTCTGCCACAGCT 533
                                                                                                                                                                                                                                                                                                                  TGGAGCACGTCTCGGGGGGGGAGACTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                                                                                                                           ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAAGATAGCCGATTTCGGATTATCTAATATGATGTCAGATGGTGAATTTCTGAGAACTA
                                          TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCA 653
                                                                                                               ACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA 593
                                                                                                                                                                                                                                                                       TGGAATATGTGTCTGGAGGTGAATTATTTGACTACATCTGTAAGCATGGACGGGTTGAAG 337
                                                                                                                                                                                                                                                                                                                                                                 ATCCTCATATTATCAAACTATACCAGGTGATCAGCACTCCAACAGATTTTTTTATGGTAA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGTTTAGATGTTGTTGGAAAAATAAAACGAGAAATTCAAAATCTAAAACTCTTTCGTC 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAACATCAATTAACAGGCCATAAAGTGGCAGTTAAAATCTTAAATAGACAGAAGATTC 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                     ATATGGTTGTTCATCGAGACCTGAAACCAGAGAATGTCCTGTTGGATGCACACATGAATG 457
                                                                                                                                                                               AGATGGAAGCCAGGCGGCTCTTTCAGCAGATTCTGTCTGCTGTGGATTACTGTCATAGGC 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGAGT----CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Beri, Rajindar K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 182.6; DE Pred. No. 4e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4; Length 1736;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 354; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
••
517
```

```
덩
                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: DNA
; ORGANISM: Human AMP protein kinase
US-08-557-006C-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-557-006C-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 36
LENGTH: 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 36, Application US/08557006C
Patent No. 6258547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 6.1%;
Best Local Similarity 53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 408;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
APPLICANT: Forder, Robert A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NGAP/PHM37588/UST
CURRENT APPLICATION NUMBER: US/08/557,006C
CURRENT FILING DATE: 1996-03-05
CURRENT FILING DATE: 1996-03-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: PCT, PRIOR FILING DATE: 1994-05-20 PRIOR APPLICATION NUMBER: GB PRIOR FILING DATE: 1993-05-21 PRIOR APPLICATION NUMBER: GB PRIOR APPLICATION NUMBER: GB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE: 19 NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
  474
                                                                                          414
                                                                                                                                     219
                                                                                                                                                                                     354
                                                                                                                                                                                                                               159
                                                                                                                                                                                                                                                                             297
                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                834 TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC 893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              654
                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                  39
CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 533
                                                                                                                                                                                                                             GCAGTTTAGATGTTGTTGGAAAAATAAAACGAGAAATTCAAAATCTAAAACTCTTTCGTC 218
                                                                                                                                                                                                                                                                                                                                             GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCCGGGAGAAGCTGT 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTGAAACGAGCAACTATCAAAGACATAAGAGAGCATGAATGGT 802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTIGATGATGAGCATGTACCTACGTTATTTAAGAAGATCCGAGGGGGGTGTCTTTATA 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGC 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGCGGATCTCCAAATTATGCAGCACCTGAAGTCATCTCAGGCAGATTGTATGCAGGTC 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCC
                                          TGGAATATGTGTGTGGAGGTGAATTATTTGACTACATCTGTAAGCATGGACGGGTTGAAG 338
                                                                                                                                     ATCCTCATATTATCAAACTATACCAGGTGATCAGCACTCCAACAGATTTTTTATGGTAA 278
                                                                                                                                                                             ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 413
                                                                                                                                                                                                                                                                        CGGAGT---CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 353
                                                                                                                                                                                                                                                                                                                     GAGAACATCAATTAACAGGCCATAAAGTGGCAGTTAAAATCTTAAATAGACAGAAGATTC 158
                                                                                                                                                                                                                                                                                                                                                                                                                TCGGACACTACGTGCTGGGCGACACGCTGGGCGTCGGCACCTTCGGCAAAGTGAAGATTG 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGAAGTTGATATCTGGAGCTGTGGTGTTATCTTGTATGCTCTTCTTTGTGGCACCCTCC
                                                                                        TGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCCAGAATATCTCAATCGTTCTGTCGCCACTCTCCTGATGCATATGCTGCAGGTTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Beri,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rajindar K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GB 9310489.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GB 9318010.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 182.6; DB 4;
Pred. No. 4.1e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      757
```

Ô

```
758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                           US-08-557-006C-44
                                                                                                                                                                 밁
                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; NAME/KEY:
; LOCATION:
US-08-677-298-1
                                                                                                                RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뜅
                                                 GENERAL INFORMATION:
                                                              Sequence 44, Application US/08557006C Patent No. 6258547
 APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 404;
                                                                                                                                                                                                                                                                                                                                                                                                                                  1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1013
                                                                                                                                                                 1313 A 1313
                                                                                                                                                                                                 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            953 AAATAGCAGATTTCGGTTTTAGCAATGAATTTACTGTTGGCGGTAAACTCGACACGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      533 TCGGAAACTACAGACTGTTGAAAACAATCGGCAAGGGGGAATTTTGCAAAAGTAAAATTGG 592
                                                                                                                                                                                                 A 957
                                                                                                                                                                                                                                TTAAACGCGGCACTCTAGAGCAAATCATGAAGGACAGGTGGATCAATGCAGGGCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCCTCTGCCCT 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACG 956
                                                                                                                                                                                                                                                                                                                                                                                  TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAACGGGGCGTCTTCCACATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATCGTACATCGAGACCTCAAGGCTGAAAATCTATTGTTAGATGCCGATATGAACATTA 952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCA 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296
                                                                                                                                                                                                                                                                                             CCTTCTACATGTCTACAGACTGTGAAAACCTTCTCAAACGTTTCCTGGTGCTAAATCCAA 1252
                                                                                                                                                                                                                                                                                                                             CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG 896
                                                                                                                                                                                                                                                                                                                                                              TTGATGGGCAAAACCTAAAGGAACTGAGAGAGAGAGAGTATTAAGAGGGAAATACAGAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTGGATGTGTGGAGTCTGGGGGGTCATTTTATACACACTAGTCAGTGGCTCACTTCCCT 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGGCAGTCCTCCATACGCAGCACCTGAGCTCTTCCAGGGCAAGAATATGACGGGCCAG 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATATGCAAGTGGAGGTGAAGTATTTGACTATTTGGTTGCACATGGCAGGATGAAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAATATAGTGAAGTTATTCGAAGTCATTGAAACTGAAAAAACACTCTACCTAATCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCCAACAAGTCTACAAAAGCTCTTCAGAGAAGTAAGAATAATGAAGATTTTAAATCATC 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGACATATCCTTACAGGCAGAGAGGTTGCAATAAAAATAATTGACAAAACTCAGTTGA 652
Beri, Rajindar K.
Carling, David
Forder, Robert A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
376..2565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.0%;
51.7%;
                                ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 177.8; DB 2;
Pred. No. 4.6e-28;
0; Mismatches 377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2698;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          596
                                                                                                                                                                                                                                                                                                                                                              1192
                                                                                                                                                                                                                                                                                                                                                                                              836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
US-08-677-298-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/08677298
Patent No. 5863729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Piwnic
                                                                                                                         TELEFAX: (303) 499-8089
INFORMATION FOR SEQ ID NO:
                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 2698 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Relaction DATA:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
FILING DATE: 09-JUL-199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Piwnica-Worms, Helen
TITLE OF INVENTION: DNA SEQUENCES ENCODING HUMAN TCAK-1
TITLE OF INVENTION: KINASE
NUMBER OF SEQUENCES: 17
                                                                                                                                                            TELECOMMUNICATION INFORMATION: TELEPHONE: (303) 499-8080
                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 339
                                                                                                                                                                                                   NAME: Caruthers, Jennie M. REGISTRATION NUMBER: 34,464 REFERENCE/DOCKET NUMBER: 9-96
                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: U
                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Greenlee, Winner and Sullivan, STREET: 5370 Manhattan Circle, Suite 201
                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGAAGTTGATATCTGGAGCTGTGGTGTTATCTTGTATGCTCTTCTTTGTGGCACCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTGGTGGGGGCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAAGATAGCCGATTTCGGATTATCTAATATGATGTCAGATGGTGAATTTCTGAGAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATTTGATGATGAGCATGTACCTACGTTATTTAAGAAGATCCGAGGGGGGTGTCTTTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTCCATCTGCCACAGAGACCTAAAGCCCGGAGAACCTGCTTTTGGATGAGAAAAAACAACA 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACTGAAACGAGCAACTATCAAAGACATAAGAGAGCATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGCGGATCTCCAAATTATGCAGCACCTGAAGTCATCTCAGGCAGATTGTATGCAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCCAGAATATCTCAATCGTTCTGTCGCCACTCTCCTGATGCATATGCTGCAGGTTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATGGTTGTTCATCGAGACCTGAAACCAGAGAATGTCCTGTTGGATGCACACATGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATGGAAGCCAGGCGGCTCTTTCAGCAGATTCTGTCTGCTGTGGATTACTGTCATAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                           (303)
                        not relevant
                                                                                                                                                                                                                                                                                                                                                                                 IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                      Floppy disk
                                                                                                                                                                                                                                                                                                     09-JUL-1996
      cDNA to mRNA
                                           double
                                                                                                                                                                                                                                                                                                                                                           Release #1.0, Version
                                                                                                                                                                                                                                                                                                                      US/08/677,298
                                                                                                                         <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                               #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P.C.
```

HYPOTHETICAL:

Š

ANTI-SENSE:

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                             밁
                                                                                Š
                                                                                                                           밁
                                                                                                                                                           S
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ÚS-08-557-006C-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Pate
SEQ ID NO 44
LENGTH: 1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER:
PRIOR FILING DATE: 1994-0
PRIOR APPLICATION NUMBER:
PRIOR FILING DATE: 1993-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: gene
LOCATION: (1)..(1747)
OTHER INFORMATION: Full length cDNA sequence fragment of Human AMPK -
OTHER INFORMATION: fragment begins at nucleotide 24 and ends with
OTHER INFORMATION: nucleotide 1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: GB
PRIOR FILING DATE: 1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/08/557,006C CURRENT FILING DATE: 1996-03-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
FILE REFERENCE: NGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    829
                                                                                                                                                                712 CCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCT 771
                                                                                                                                                                                                      518 TAGCTGTGGATCGCCAAATTATGCAGCACCGGAGGTCATCTCAGGAAGGCTGTATGCGGG
                                                                                                                                                                                                                                                652 CAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGG 711
                                                                                                                                                                                                                                                                                             458
                                                                                                                                                                                                                                                                                                                                  592 CATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGAC 651
                                                                                                                                                                                                                                                                                                                                                                             398
                                                                                                                                                                                                                                                                                                                                                                                                                  532 CTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAA 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                           338 AGGTGGAAGCTCGCCGGCTCTTCCAGCAGATTCTGTCTGCCGTGGACTACTGTCTCACAG 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTG--CCACAG 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGTTTAGATGTTGGAAAAATAAAACGAGAAATTCAAAATCTTAAACTCTTTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCCTCATATTATCAAACTCTACCAAGTGATCAGCACTCCAACAGACTTTTTTATGGTAA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAGT----CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 353
CCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGT 888
                                         CCCGTTCGACGACGATGAGCACGTGCCTACGCTCTTTAAGAAGATCCGAGGGGGTGTGTT
                                                                                                                      TCCTGAGGTTGATATCTGGAGCTGTGGGTGTTATCCTGTATGCCCTTCTCTGTGGCACCCT
                                                                                                                                                                                                                                                                                                                                                                           GCACATGGTTGTCCACAGGGACCTGAAGCCAGAGAACGTGTTGCTGGACGCCCAGATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAATATGTGTCTGGAGGTGAATTGTTCGACTACATCTGTAAACACGGGGAGGGTTGAAG 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 296
                                                                                  GCCCTTTGATGAC---GACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTT 828
                                                                                                                                                                                                                                                                                           TGCTAAGATAGCTGACTTCGGACTCTCTAATATGATGTCAGATGGTGAATTTCTACGAAC 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAACATCAATTGACAGGCCATAAAGTGGCAGTTAAGATCTTAAATAGACAGAAGATTC 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGGACACTACGTGCTGGGGGACACCCTGGGCCTCGGCACCTTCGGCAAAGTGAAGATTG 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ON: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE NGAP/PHM37588/UST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1994-05-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1993-05-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT/GB94/01093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GB 9318010.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GB 9310489.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 175.2; DB 4; Pred. No. 1.4e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               343;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                      637
                                         697
                                                                                                                                                                                                         577
                                                                                                                                                                                                                                                                                                                                                                           457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
••
```

```
US-09-159-385-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
US-09-159-385-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(213)
US-09-930-181-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
US-09-930-181-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                     SOFTWARE: PATENTIN V
SEQ ID NO 3
LENGTH: 2132
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: OriGene Technologies
APPLICANT: OriGene Technologies
TITLE OF INVENTION: Full-Length Serine Protein Kinase in Brain
FILE REFERENCE: 16U 101 V1
CURRENT FILING NUMBER: US/09/930,181
CURRENT FILING DATE: 2001-08-16
NUMBER OF SEQ ID NOS: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 5
LENGTH: 213
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 5, Application US/09930181
Patent No. 6455292
                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/09159385 Patent No. 5958748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                        EARLIER APPLICATION NUMBER: JP97/261589
EARLIER FILING DATE: 1997-09-26
NUMBER OF SEQ ID NOS: 8
                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/159,385
CURRENT FILING DATE: 1998-09-23
                                                                                                                                                                                                                                                                    TITLE OF INVENTION: DNA CODING FOR SERINE/THREONINE KINASE FILE REFERENCE: PH-569
                                                                                                                                                                                                                                                                                                       APPLICANT: AKIRA, SHIZUO APPLICANT: KAWAI, TARO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn version 3.0
                                   NAME/KEY: CDS
LOCATION: (94
                                                                         FEATURE:
                                                                                      ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159 CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAG 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAACCGGGAGAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGACCCCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCAGCACGCCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGCAGA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                             Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.9%;
86.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 145; DB 4; Lenyu. --
Pred. No. 1.4e-21;
""matches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and Pancreas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            208
```

0;

```
APPLICANT: AKIRA, SHIZUO
APPLICANT: KAWAI, TARO
TITLE OF INVENTION: DNA CODING FOR SERINE/THREONINE KINASE
FILE REFERENCE: 081356/0128
CURRENT APPLICATION NUMBER: US/09/186,277
CURRENT FILING DATE: 1998-11-05
EARLIER APPLICATION NUMBER: JP97/261589
EARLIER FILING DATE: 1997-09-26
NUMBER OF SEQ. ID NOS: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTCATCCTCTTCGCCCCTGCGCGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCA 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCCGTTCACTACCTGCACTCTAAGCGCATCGCACACTTTGACCTGAAGCCGGAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGGAGAAAGAGTCGCTGACGGAGGACGAGGCCACCCAGTTCCTCAAGCAGATCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTAAAGAAGGGGAGACTGACGCCCCAAGGAGGCCCCGAAAGTTCTTCCGCCAGATTGTGTC 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCT 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACATCCTGCGGGAGATCCGGCACCCCAACATCATCACCCTGCACGACATCTTCGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAA 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGCGCCGCCTGTCATCCAGCCGGCGTGGGGTGAGCCGGGAGGAGATCGAGCGGGAGGT 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGGGAGAAGCTGTC------GGAGTCGGTGCTGATGAAGGTGGAGCGGGAGAT 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCGTGCGGAAGTGCCGGCAGAAGGGCACGGCCAAGGTACGCAGCCAAGTTCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAA 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCAGAGATTGTGAACTATGAGCCGCTG----GGCCTGGAGGCGGACATGTGGAGCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGG 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCACAAGATCGAGGCGGGAACGAGTTCAAGAACATCTTCGGCACCCCGGAGTTTGTGGC 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGCTGCTGGACAAGAACGTGCCCAACCCACGAATCAAGCTCATCGACTTCGGCATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTTTGGATGAGAAAAAC------AACATCCGCATTGCAGACTTCGGCATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGACGGACGTGGTCCTCATCCTGGAGCTGGTCTCTGGCGGGGAGCTCTTTGACTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGGAGGACGTGGAGGACCATTATGAGATGGGGGAGGAGCTGGGCAGCGGCCAGTTTGC 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTCATCACCTATATCCTCCTGAGCGGTGCATCCCCGTTCCTGGGCGAGACCAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>=</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 135.6; DB 2; Length Pred. No. 2.6e-19; O; Mismatches 279; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                             US-09-159-385-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; LOCATION: (94)..(1455)
US-09-186-277-3
                                                                                                                                                                                                                     Sequence 4, Application US/09159385 Patent No. 5958748 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                APPLICANT: AKIRA, SHIZUO
APPLICANT: KAWAI, TARO
TITLE OF INVENTION: DNA CODING FOR SERINE/THREONINE
FILE REFERENCE: PH-569
CURRENT APPLICATION NUMBER: US/09/159,385
CURRENT FILING DATE: 1998-09-23
EARLIER FILING DATE: 1997-09-26
EARLIER FILING DATE: 1997-09-26
ROBER OF SEQ ID NOS: 8
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 619
                                                                                                                                                                                                                                                                                                                                                                                   765
                                                                                                                                                                                                                                                                                                                                                                                                                               799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      391 CAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTT 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7 Match 4.6%;
Local Similarity 54.1%;
nes 360; Conservative
                                                                                                                                                                                                                                                                                                                                                                                   GACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTCATCCTCTTCGCCCTGCTGGGGGGCTCTGCCCCTTTGATGACGACAACCTCCGCCA 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGCTGCTGGACAAGAACGTGCCCAACCCACGAATCAAGCTCATCGACTTCGGCATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGGAGAAAGAGTCGCTGACGGACGAGGACGAGCCACCCAGTTCCTCAAGCAGATCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTTCCGCCCAGATTGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGACGACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGCGCCGCCTGTCATCCAGCCGGCGTGGGGTGAGCCGGGAGGAGATCGAGCGGGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAA 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGGAGGACGTGGAGGACCATTATGAGATGGGGGAGGAGCTGGGCAGCGGCCAGTTTGC 167
                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGCT 804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTCATCACCTATATCCTCCTGAGCGGTGCATCCCCGTTCCTGGGCGAGACCAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCAGAGATTGTGAACTATGAGCCGCTG----GGCCTGGAGGCGGACATGTGGAGCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACAAGATCGAGGCGGGGAACGAGTTCAAGAACATCTTCGGCACCCCGGAGTTTGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTTTGGATGAGAAAAAC------AACATCCGCATTGCAGACTTCGGCATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGCGTTCACTACCTGCACTCTAAGCGCATCGCACACTTTGACCTGAAGCCGGAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGACGGACGTGGTCCTCATCCTGGAGCTGGTCTCTGGCGGGGAGCTCTTTGACTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACATCCTGCGGGAGATCCGGCACCCCAACATCATCACCCTGCACGACATCTTCGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGGGAGAGCTGTC------GGAGTCGGTGCTGATGAAGGTGGAGCGGGAGAT 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCGTGCGGAAGTGCCGGCAGAAGGGCAACGGGCAAGGAGTACGCAAGTTCATCAA 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 135.6; DB 4;
Pred. No. 2.6e-19;
0; Mismatches 279;
                                                                                                                                                         KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
```

δ 밁 Š

밁

US-09-186-277-3

765 799 705 739 648

GACGCT 770 GCTGCT 804

GENERAL INFORMATION:

Sequence 3, Application US/09186277 Patent No. 6171841

SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 3

TYPE: DNA ORGANISM: HOMO LENGTH: 2132

sapiens

Š

밁

882 619 528 Q В ρy

468

В

δÃ 밁 Š 밁 δÃ 밁 Ş 밁 δÃ В

> 288 331 228

밁

408 451 348 Ş

168 223 108 Query Match
Best Local Similarity

4.6%; ilarity 54.1%; Conservative

0;

2132;

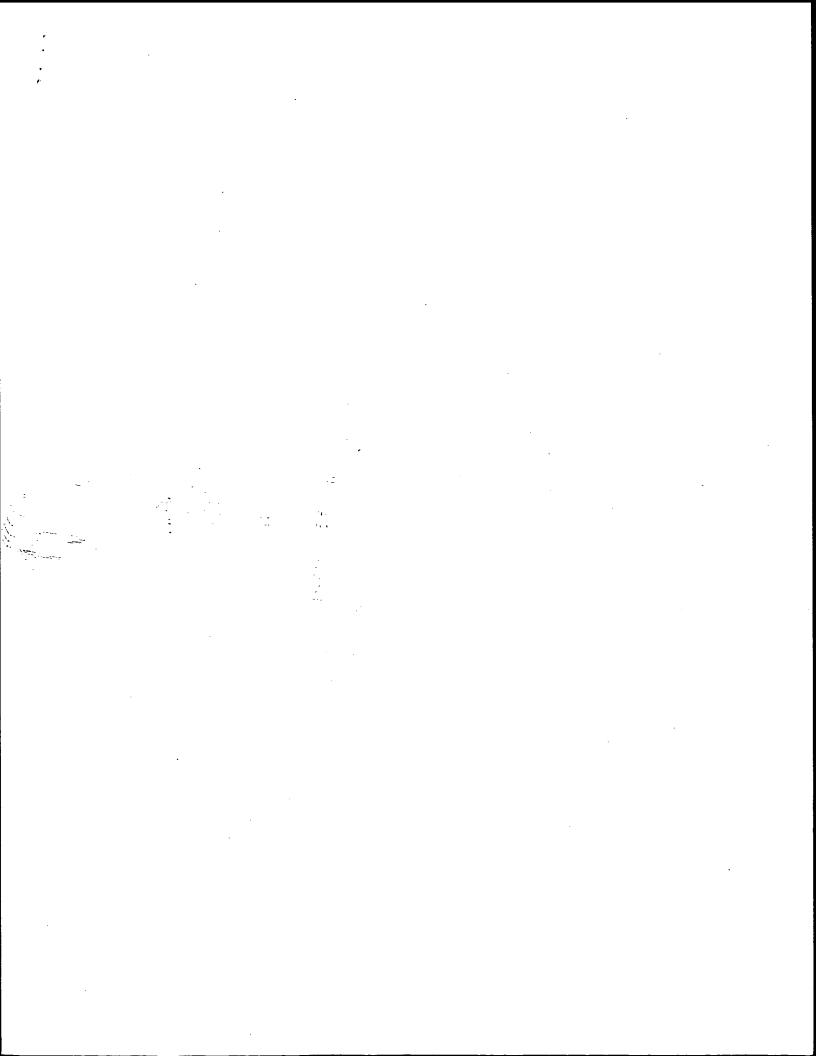
NAME/KEY: CDS FEATURE:

Matches 360;

2

```
; SEQ ID NO 4
; LENGTH: 1429
; TYPE: DNA
; ORGANISM: Mus musculus
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (10)..(1353)
US-09-159-385-4
                                                                                                                                                    Š
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 4.4%; Score 130.6; DB 2; Length 1429; Best Local Similarity 56.5%; Pred. No. 2.5e-18; Matches 291; Conservative 0; Mismatches 209; Indels 15; Gaps
                                                                                                                                                                                              656 TGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGC 715
                               776 TTTGATGACGACAACCTCCGCCAGCTGCTGGAGAA 810
                                                                                                                                                                                                                                                                                                                                                                                                  658 TTCCTGGGCGAGACCAAGCAGGAGACGCTGACGAA 692
                                                                                            598 GAGGCTGACATGTGGAGCATTGGCGTCATCACCTACATCCTCCTGAGCGGAGCGTCCCCA 657
                                                                                                                                 716 CGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCC 775
                                                                                                                                                                                                                                                                                                   481 AAGCTCATCGACTTTGGCATCGCGCACAGGATCGAGGCTGGCAGCGAGCTTCAAGAACATC 540
                                                                                                                                                                                                                                                                                                                                                   599 ---ATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGC 655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 CAGTTCCTCAAACAATCCTAGACGGTGTCCACTACCTGCACTCCAAGCGCATCGCACAC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         488 AAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCAC 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 GGTGGCGAGCTTTTCGACTTCCTGGCCGAGAAGGAGTCATTGACGGAGGATGAGGCCACG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           428 GGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGA 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 ACACTGCATGACGTGTTCGAGAACAAGACAGATGTGGTGCTGATCCTGGAGCTGGTGTCC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                368 AAGCTCCACGACGTCTACGAGAAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCG 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 CGGGAGGAGATCGAACGCGAGGTGAGCATCCTGCGCGAGATCCGCCAACCATCATA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               308 CTGATGAAGGTGGAGCGGGAGATCGCCAATCCTGAAGCTCAATCGAACACCCACATGTCCTC 367
```

Search completed: April 22, 2003, 00:25:56 Job time: 83.9763 secs



```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-003-690-1
2980
1 gtcgacccacgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       April 21, 2003, 20:07:11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16154066 seqs, 8097743376 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gtcgacccacgcgtccgcgg.....aaaaaaaagggcggccgcta 2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                  gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                     em_esthum: *
                                                                                                                                                                                                                                                                                                                                  em_estro:*
                                                                                                                                                                                                                                                                                                                                                      em_estpl:*
                                                                                                                                                                                                                                                                                                                                                                      em_estov:*
                                                                                                                                                                                                                                                                                                                                                                                       em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                                                     em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                                                                      em_estba:*
                                                                em_gss_mam:*
                                                                                                                                                                  gb_gss:*
                                                                                                                                                                                  em_estom: *
                                                                                                                                                                                                                     gb_est5:*
                 em_gss_pro:*
                               em_gss_other:*
                                                  em_gss_mus:*
                                                                                   em_gss_fun:*
                                                                                                  em_gss_vrt:*
                                                                                                                em_gss_pln:*
                                                                                                                                   em_gss_inv:*
                                                                                                                                                   em_gss_hum:*
                                                                                                                                                                                                     em_estfun:*
                                                                                                                                                                                                                                      gb_est4:*
                                                                                                                                                                                                                                                  gb_est3:*
                                                                                                                                                                                                                                                                   gb_htc:
                                                                                                                                                                                                                                                                                   gb_est2:*
_gss_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Search time 2714.75 Seconds (without alignments)
17777.901 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32308132
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

	ი			;	No.	Res	
6	υ <b>-</b>	ω	N	_ ;	No.	ult	
592.4	623.4	651.2	723.6	759.8	Ø		
19.9	20.9	21.9	24.3			Query	æ
869	678 658	831	881	688	ength I		
14	14 12	12	14	14			
BM948524	BM67,5364 BG819795	BF529743	B0717903	BQ434571	ID		
BM948524 UI-M-EG0p	BM675364 UI-E-EJO- BG819795 602781839	BF529743 602044002	BO717903 AGENCOTTET	BO434571 AGENCOURT	Description		

O	0 0	o o	-0 .
44444	3 3 3 3 3 3 4 3 4 5 5 6 5 4	332	0.222222222222222222222222222222222222
318.2 307.2 307.2 307.2 306 305.2	36. 31. 32.	374.4 366.2 365 352.2 341.8	55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
			118.23 118.23 117.17 117.17 117.17 117.17 118.23 118.44 118.44 118.47 11
1177 733 1882 546 563 334	712 337 344 367	488 793 427 418	
			111611111111111 444 884888448884
BM46629 BG395625 BC017182 BC017182 BM944658 BE251924 BF371253	- w - 5 6 6	W60403 AI135353 BE222941 W18584 AW122891	BM944329 BQ178547 BQ573641 AL538014 BF529630 BF6295 BF229174 BQ444032 BF796285 BM944236 BQ759984 BQ76984 BQ778984 BQ718695 BQ7178695 BQ7178695 BQ7178695 BQ7178695 BQ7178695 BQ7178695 BQ7178695 BQ7178695
M/5642 me49aUs.ri BM466629 AGENCOURT BG395625 602458251 BC017182 Homo sapi BM944658 UI-M-EHOP BE251924 601107590 BF371253 RC6-FN013	EQ18007 BM12966 BQ43532 BF93110 BE76350	W60403 zd29h06 rl AI135353 GH13047.55 BE222941 hu44g07. W18584 mb88c11.rl AW122891 UI-M-BH2	329 UI-M- 547 UI M- 14 AL538 630 60204 630 60204 73 UI-M- 285 60225 285 60225 285 60225 286 UI-M- 287 UI-M- 432 IL3-E 432 IL3-E 432 IL3-E 432 IL3-E 644 UI-M- 731 UI-M-

## ALIGNMENTS

SOURCE ACCESSION VERSION KEYWORDS RESULT 1 BQ434571 LOCUS REFERENCE COMMENT DEFINITION AUTHORS TITLE JOURNAL ORGANISM source 889 bp mRNA linear EST 24-MAY-2002 AGENCOURT\_7917755 NIH\_MGC\_67 Homo sapiens cDNA clone IMAGE:6154749 5', mRNA sequence. BQ434571 Eukaryota; Metazoa; Chordata; Craniata; V Mammalia; Eutheria; Primates; Catarrhini; 1 (bases 1 to 889) NIH-WGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Unpublished (1999) CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. CONSORTIUM (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
http://image.llnl.gov
Plate: LLAM13496 row: e column: 22 Email: cgapbs-r@mail.nih.gov Tissue Procurement: ATCC Contact: Robert Strausberg, Ph.D. Homo sapiens BQ434571.1 GI:21173647 numan. quality sequence stop: 681.
Location/Qualifiers Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo. Gene Collection (MGC)

			,	<u> </u>	-
04 04 04 04	Que Bes Mat	BASE C	FEATURES SOU	ACCESSION VERSION KEYWORDS SOURCE ORGANIS REFERENCE AUTHORS TITLE JOURNAL COMMENT	RESULT 2 BQ717903 LOCUS DEFINITION
61 690 121 750 181 810	ery Ma it Loc Iches 570 1 630	COUNT	RES	CCESSION ERRSION EXWORDS OURCE ORGANISM ORGANISM ORGANISM TITLE JOURNAL OMMENT	T 2 903 ITION
TGGGGGACAGCCTCCTGGAGACCAGCTGCCGGGTCCCCCATTATGCGTGTCCAGAGGTGA 120 TTAAGGGGGAAAAATATGATGGCGGCGGCGGCAGACATGTGGAGCTGTGGAGTCATCCTCT 749	/ Match 24.3%; Score 723.6; DB 14; Length 881; Local Similarity 95.3%; Pred. No. 6.2e-90; Local Similarity 95.3%; Pred. No. 6.2e-90; grant for the state of the s	/db_xrer="taxon:9006" /clone_lib="Lupski_sympathetic_trunk" /clone_lib="Lupski_sympathetic_trunk" /sex="male" /tissue_type="sympathetic trunk" /dev_stage="adult, 16 yr" /lab_host="DHIOB" /note="Yector: pCMV-SPORT6 (Life Technologies); Site_1: NotI; Site_2: SalI; cDNA: made by oligo-dT priming. Directionally cloned using the following adaptors: 5'-TCGACCCACGCGTCGG-3' and 5'-GACTAGTTCTAGATCGCGAGCGGCCCT(15)-3'. Size selected > 1 kb for average insert length 1.9 kb. This is a primary library, non-amplified, Library constructed by Life Technologies and donated by J. Lupski, M.D./Ph.D. (Baylor College of Medicine); available through Life Technologies." 192 a 260 c 271 g 155 t	cDNA Library Preparation: Life To CDNA Library Arrayed by: The I.M. DNA Sequencing by: Agencourt Bic Clone distribution: MGC clone difound through the I.M.A.G.E. Conshitp://image.linl.gov c column: http://image.linl.gov c column: High quality sequence stop: 620. Location/Qualifiers 1.881 /organism="Homo sapiens"	BQ717903.1 GI:21856800 EST. human. Homo sapiens Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 881) NIH-MGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999) Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov Tissue Procurement: Dr. James R. Lupski	BQ717903  881 bp mRNA linear EST 16-JUL-2002 AGENCOURT_8241190 Lupski_sympathetic_trunk Homo sapiens cDNA clone IMAGE:6186946 5', mRNA sequence.

р. <b>Q</b>	D Qy	Qy Db	Qy Db	Оу	Оу	Qу	Qу Db	Qy	Qy	Qy Db	Qу Db	Qу	Qy Db	Quer Best Matc	BASE C
966 CGTG-CCTGGAGCCAGCCCC 984 	909 GTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACC 965 	849 CTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAAGGCTCA 908 	789 ACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTC 848	729 GGAGCTGTGGAGTCATCCTCTTCGCCCTGCTGGGGGGCTCTGCCCTTTGATGACGACA 788	669 ATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACATGT 728 	609 TCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCC 668	549 GAGACCTAAAGCCCGGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACT 608 	489 AGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACA 548	429 GGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCGAA 488 	369 AGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGG 428 	309 TGATGAAGGTGGAGGGGGAGATCGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCA 368 	249 TCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAAAGCTGTCGGAGTCGGTGC 308	189 GGCTGGAGAAGACGCTGGGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCA 248 	y Match 25.5%; Score 759.8; DB 14; Length 889; Local Similarity 98.5%; Pred. No. 7e-95; hes 788; Conservative 0; Mismatches 8; Indels 4; Gaps 2;	/organism="Homo sapiens" /db_xref="taxon:9606" /clone="InAGE:6134749" /clone_lib="NIH_MGC_67" /tissue_type="retinoblastoma" /tissue_type="retinoblastoma" /lab_host="DH10B (phage-resistant)" /note="Organ: eye; Vector: pCMV-SPORT6; Site_1: NotI; /note="Organ: eye; Vector: pCMV-SPORT6; Site_1: NotI; Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT. Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.75 kb. Library constructed by Life Technologies." Technologies." 207 a 246 c 274 g 160 t 2 others

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
BF529743
                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                             COMMENT
                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Snoo
                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1050
                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAA 1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCCTGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGA 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCTTGGCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGATGGCCCAG 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTCTGAGCATCCCGATGGCCCGGGGGGGGGGGGTTCCCCCTGGNCCCCCCCCGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTG 1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAAAC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAAAC 929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCC
                                                                                                           Email: cgapbs-r@mail.nih.gov
Tissue Procurement: David N. Louis, M.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.lni.gov
Plate: LLAM9495 row: c column: 01
High quality sequence stop: 736.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         831 bp 602044002F1 NCI_CGAP_Brn67 Homo 5', mRNA seguence
                                                                                                                                                                                                                                                                                         NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 831)
                                                                                                                                                                                                                                                                             Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                           BF529743.1 GI:11617106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence
/clone="IMAGE:4181688"
/clone_lib="NCI_CGAP_Brn67"
/tlssue_type="anaplastic oligodendroglioma with
                                                /db_xref="taxon:9606"
                                                              organism="Homo sapiens"
                                                                                               ocation/Qualifiers
                                                                                .831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA clone IMAGE:4181688
                                                                                                                                                                                                                                                                                                           Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                           Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 11-DEC-2000
   1p/19q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
```

```
RESULT 4
BM675364/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                            밁
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
       VERSION
                                                  DEFINITION
                                                                rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                         1121
                                                                                                                                                                                                                                                                                              1002
                                                                                                                                                                                                     702
                                                                                                                                                                                                                                                                                                                            583
                                                                                                                                                                                                                                                                                                                                                                                                                                                 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             403 GTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGG 462
                                                                                                                                                                                                                                                                                                                                                                                       523
                                                                                                                                                                                                                                                                                                                                                                                                                   882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGACTGACGCCCAA-GGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACT 521
                                                                                                                                                            CAAGAAAAGATGATAT 1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGG 103
                                                                                                                                                                                                                                                                                                                                              GCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGA 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATG 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGACTGACGCCCAAGGGAGGCCCGAAAGTTCTTCCGCCAGA-TGTGTCTGCGCTGGACT 162
                                                                                                                                                                                                     CCTGGGCTGTTCAGGGACCGCGAGAGGGCTGCATCGCGAGCTGCGCAGGAGGGAAACC
                                                                                                                                                                                                                                  CTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAAC 1120
                                                                                                                                                                                                                                                              TGCGG-AGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCA 1060
                                                                                                                                                                                                                                                                                                                                                                                                     TCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATATGATGATGCCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAA 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                       TCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGG
078 bp mRNA linea UI-E-EJO-ahr-p-12-0-UI.sl UI-E-EJO Homo sapiens UI-E-EJO-ahr-p-12-0-UI 3', mRNA sequence. BM675364 BM675364.1 GI:18985262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /lab_host="DH10B (T1 phage-resistant)"
.note="organ: brain; Vector: pCMV-SPORT6; Site_1:
.Site_2: Sall; Cloned unidirectionally. Primer: Oli
.Noterage insert size 2.3 kb. Constructed by Life
.Technologies. Note: this is a NCI_CGAP Library."
a 237 c 258 g 151 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21.9%;
96.3%;
                                                                                                                                            777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 651.2; DB Pred. No. 5e-80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23;
                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                  CDNA
                                                                EST 27-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oligo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                701
                                                                                                                                                                                                                                                                                                                            642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   342
                                                                                                                                                                                                                                                                                                                                                                                                                   941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NotI;
                                                                                                                                                                                                       761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dī.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
```

REFERENCE

AUTHORS

1 (bases 1 to 678) Bonaldo, M.F., Lenno

Lennon, G. and Soares, M.B.

TITLE

SOURCE KEYWORDS

ORGANISM

Eukaryota; Homo sapiens human

```
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                678;
                                                                                                                                                          ω
--
                                                                                                                                                          Gaps
                                                                                                                                                          w
••
                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
BG819795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                            FEATURES
                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Focus
                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2791 CCTCCCCCAC-GACCTTCTGTACGGATTTGCTCTCC-GGAAGGAATTCTGGTTTCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2311 AAGCCTGCAGCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGCCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2849 GA 2850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2551 CAGGGATGGGGCTCCACAGGCCGTGCCCAACTGGGGGTGCTTCTAGGGGAACAGGGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGCGGGTGGGGGGGGGGGACGGAGCTGGTTGGGGTGGCTTAGCAGATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTGCGGGGTGGGGTGGGGAGGGACGGGAGCTGGTTGGGGTGGCTTAGCAGATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAAATAAGGCCCAAGGAACATGTCGGGAGGGGGGGGTGGACACAAAAACCGGCCCTTGCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTGACCCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GA 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGGCCCTCTGTCCCTGTCGTCCCCAACCCCCTCTTCCCGGGCCCCCTCCTCCCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGGCCCTCTGTCCCTGTGTCGCCCCAACCCCCTCTTCCCGGGCCCCCTCCTCCCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGGATGGGGCTCCACAGGCCGTGCCCAACTGGGGGGTGGTTCTAGGGGAACAGGGGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T-AATAAGGCCCAAGGAACATGTCGGGAGGGGGGGGTGGACAAAAAACCGGCCTTGCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCCGGGGAGGGAGGGGACCCCCCTCCACCCCCTTCCGTGCCCCCCAACTGTGAATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCCTGCAGCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCCGCCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCCGGGGAGGGAGGNGACCCCCCCCCCCCCCCCTTCCGTGCCCCCCAACTGTGAATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCCTGACCCCACGG
                                                                                                                                                Email: cgapbs-r@mail.nih.gov
Tissue Procurement: David N. Louis, M.D.
CDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 658)

NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                        found through the I.M.A.G.E. Consortium/LLNL http://image.llnl.gov plate: LLAM10858 row: n column: 09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG819795 658 bp mRNA linear EST 22-MAY-2 602781839F1 NCI_CGAP_Brn67 Homo sapiens cDNA clone IMAGE:4932680
                                                  High quality sequence stop: 612.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5', mRNA sequence.
BG819795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG819795
                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BG819795.1 GI:14167382
                                        1. .658
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST 22-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                    þe
```

Š В 뫄 δÃ BASE COUNT FEATURES COMMENT Matches 657; Query Match Best Local Similarity MEDLINE JOURNAL 2251 GCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCG 2310 2191 CAAGCGAGTGGTGGAGACCATCCAGGCACCAGCTCCTGAGCACTCATGACCAGCCCTTCCGT 2250 source 618 GCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCG CAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGT 619 Genetics (www.resgen.com).
The following repetitive elements were found in this cDNA sequence: 201-243, >(TAAA)n#Simple\_repeat Email: msoares@blue.weeg.uiowa.edu Tissue Procurement: Dr. Gregg Hage Genome Res. 6 (9), 791-806 (1996) POLYA=Yes. fissue Procurement: Dr. Gregg Hageman
CDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa
cDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa
DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
DNA Sequencing by: Researchers may obtain clones from Research Tel: 319 335 8250 Fax: 319 335 9565 451 Eckstein Medical Research Building Iowa City, IA 52242, USA University of Iowa Program for Rat Gene Discovery and Mapping Contact: Soares, MB discovery 120 primer: M13 Forward Conservative //dev\_stage="fetal and adult"
//lab\_host="DH10B (Life Technologies) (Tl phage resistant)"
//lab\_host="DH10B (Life Technologies) (Tl phage resistant)"
//note="Organ: eye; Vector: pT7T3-Pac (Pharmacia) with a
modified polylinker; Site\_1: EcoR I; Site\_2: Not I;
UI-B-EJ0 is a subtracted cDNA library constructed
according to Bonaldo, Lennon and Soares, Genome Research,
6:791-806, 1996. First strand cDNA synthesis was primed
with an oligo-dT primer containing a Not I site. Double
stranded cDNA was ligated to an EcoR I adaptor, digested
with Not I, and cloned directionally into pT/T3-Pac
vector. The oligonucleotide used to prime the synthesis of
first-strand cDNA contains a library tag sequence that is
located between the Not I site and the (dT)18 tail. The
sequence tags for this library are: fetal eyes, AGANTCANGA;
lens, CGATTAGCGA; eye anterior segment, AATGCCGCAT;
optic nerve, CCATTAAGTG; retina, CCGCG; Retina Foveal and
Macular, GTCC; Ret and Chorold, ACCTA. This library was TAG\_TISSUE=human retina
TAG\_SEQ=CCGCG" System, supported by National Eye Institute (NEI). TAG\_LIB-UI-E-EJ0 created for the program, Gene Discovery in the Visual optic nerve, retina, Retina Foveal and Macular, RPE and /clone="UI-E-EJ0-ahr-p-12-0-UI" /clone\_lib="UI-E-EJ0" /organism="Homo sapiens" /db\_xref="taxon:9606" Location/Qualifiers /tissue\_type="fetal eyes, lens, eye anterior segment, noroid" 20.9%; ი 0; Score Pred. 223 g Mismatches No. 3.6 134 t 1; DB 1 3.6e-76; 14; 2; 1 others Indels Length

```
RESULT 6
BM948524
                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                     SOURCE
                                                                                       KEYWORDS
                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                    599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    944 GCCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATG 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC 1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCGGACGGGCCTTGGAGATGGCCCAGCAC 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCATG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCATG 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAAGATGATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCAGTGAGGAGGAGAACCAA 1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCCATCACTG 106:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCGCCGGGGAGCAGCCCCCCCCCCAG 1572
                                                                                                                                                                                                                                                                                                                                                                                                  GCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCC--AGGGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAGCCGTCACGGGAAGCGGCGCCACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC 1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAA 180
                                                                                                                                                                                                                                                                                                                  GGCGCCGGGGAGCAGACCCAGAACGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGGGTGGG 1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGA 1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGCCGGGGGTGGTGCCCCTGTACCCACCGACGGCCTTGGAGATGGCCCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  619;
                                                                                                            BM948524
BM948524.1
                                                                                                                                                   BM948524 698 bp mRNA 11
UI-M-EGOp-bve-1-10-0-UI.rl NIH_BMAP_EGOp Mus
IMAGE:5591033 5', mRNA sequence.
Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                     house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /lab_host="DH10B (T1 phage-resistant)",
note="Organ: brain; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT
Average insert size 2.3 kb. Constructed by Life
Technologies. Note: this is a NCI_CGAP Library."
a 194 c 223 g 96 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="IMAGE:4932680"
/clone_lib="NCI_CGAP_Brn67"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tissue_type="anaplastic oligodendroglioma with 1p/19q/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 602.2; DB 12; Pred. No. 2.9e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                  627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8;
                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 658;
                                                                                                                                                                               musculus cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oligo dT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
```

Ş 밁 Š 밁 8 밁 δÃ 밁 δÃ 밁 Ş

밁 õ 밁 Š 밁 Š 밁 Š 밁

Š

ğ

TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGC

836

Ş

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                       밁
                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
   301
                                                                                                                                       241
                                                                                                                                                                                                          657
                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                              597
                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 19.9%;
Local Similarity 90.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCA 476
                                                                                                                                                                                                                                                                                                          GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCT 656
                                                                                                                                                                                                                                                                                                                                                                                                          GGGCAGACATGTGGAGCTGTGGAGTCATCCTATTTGCCCCTGCTTGTGGGGGGCACTGCCCT 360
                                                                GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCT 776
                                                                                                                                   GCGGGTCCCCCATTACGCATGTCCAGAGGTGATCAAGGGGGGAAAAGTATGATGGCCGCC 300
                                                                                                                                                                                                                                                                       GCATCGCAGACTTTGGTATGGCGTCCCTGCAAGTGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCC 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCACGTTTCTGGTGGTGAGCTGTTCGACTACCTGGTAAAAAAAGGGAGACTGACACCCA 60
                                                                                                                                                                                                   GCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCC 716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
CDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa
CDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa
DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
Clone Distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 698)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seq primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This clone was contributed by the Brain Molecular Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /Clone_lib="NH_BMAP_EGOP"
//tissue_type="whole brain"
//dev_stage="embryo 18.5 dpc"
//lab_host="nHBUB (TI phage resistant)"
//lab_host="nHBUB (TI phage resistant)"
//note="Organ: brain; Vector: pYX-Asc; Site_1: EcoR I;
//note="Organ: brain and Soares, Genome Research, 6:791-806,
//note="Organ: brain; Vector: pyx-Asc; Vector: pyx-Bot; Vector: pyx-Bot;
//note="Organ: brain and soares; Vector: pyx-Bot; Vector: pyx-Bot;
//note="Organ: brain and soares; Vector: pyx-Bot; Vector: p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
/strain="C57BL/6"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE:5691033"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 6.1e-72;
0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 592.4; DB 14; Length 698;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gene Collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MGC)
                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
RESULT 8
BQ178547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                               밁
                                                                                                                                                                          δÃ
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
   VERSION
                   ACCESSION
                                                 DEFINITION
                                                                   FOCUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 663
                                                                                                                                                                                                                                                                                                                                                                                                                                      1005
                                                                                                                                                                                                                                                                                                                                                                                                       482
                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 AACAACATCCGCATCGCAGACTTTGGTATGGCGTCCCTGCAAGTGGGGGGACAGCCTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAAACCTGCTTTTGGATGAGAAA 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGGCCGCCGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGG
                                                                                                                                                                                                            CAGGA-CTGCCTCCGGAATGATGTTGACCCACCTCCGTAGGCGTGTGGATTCCCCCAT
                                                                                                                                                                                                                                                                                          AAAAGATGATATTATCTGC-TTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 1183
                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATGC
                                                                                                                                                 GCTGAGCANACACGGGAAACGG
                                                                                                                                                                           GCTGAGCCGTCACGGGAAGCGG 1264
                                                                                                                                                                                                                                          CAGGACCTGCCTCCCCGGAATGATGTTGACCC-CCCCCGGAAGCGTGTGGATTCTCCCAT 1242
                                                                                                                                                                                                                                                                                                                                                                    GCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGGAGGAGGAACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                    GTAGCCTGCCTTCCAATGGCGAGCTGGACCCTGACGTTCTGGAAAGCATGGCGTCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGGAAACACGAACCAGACCCTTGCCTGGAGCCAGCCCCAGGCCGCAGAGTAGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGAGCCCGAGAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTTGGTATCNTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTA--CCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATAT 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTG
                                                                                                                                                                                                                                                                         AAAAGATGATCTATTATTTGCTTTTTGGATCGGGAAGAGCGGTATCCTAGCTGTGAAGAC
                                                                                                                                                                                                                                                                                                                                       GCTGCTTCAGAGACCGCGAGCGGCTGCACAGAGAACTGCGAAGCGAGGAGAAAACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAA 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACTGCCCTTCGATGACGACAACCTGCGCCAGCTACTGGAGAAGGTGAAACGTGGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTATTTGCCCCTGCTTGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGACCAGCTGCGGGTCCCCCATTACGCATGTCCAGAGGTGATCAAGGGGGGAAAAGTAT 181
IMAGE: 5701154 :
BQ178547
BQ178547.1 GI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 663;
                                              BQ178547 671 bp mRNJ
UI-M-EVO-bws-b-03-0-UI r1 NIH_BMAP_EVO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        University of Iowa Mouse Brain Molecular Anatomy Project (BMAP): 'Gene Discovery in the Developing Mouse Nervous System', supported by National Institute of Mental Health (NIMH), Hemin Chin, Ph.D., program coordinator."

a 197 c 219 g 145 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.3%;
89.4%;
                                 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 574.8;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.5e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74;
                                                 Mus musculus
                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             742;
                                                                EST 30-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5;
                                                                                                                                                                                                                                                                                                                                                                      1124
                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                 1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
```

SOURCE KEYWORDS

```
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BM944329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCCATGGCATCACTGGGCTGCTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCACTTCATCCCTCCAGACTGCCAGAGCCTCCTGAGAGGGGATGATTGAAGTGGAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAATGGCGAGCTGGACCCTGACGTTCTGGAAAGCATGGCGTCTCTGGGCTGCTTCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGGGTAGCCATGCGGAGCCTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTATCTGGGCGGGAAACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: Cgapbs-r@mail.nih:gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
CDNA Library preparation: Dr. M. Bento Soares, Univeristy of
CDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of
CDNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
Clone Distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NIH-MGC http://mgc.nci.nih.gov/.
mational Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1. (bases 1 to 742)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BM944329 742 bp mRNA linear EST 14-MAR-20
UI-M-EHOp-bvq-d-01-0-UI.rl NIH_BMAP_EHOp Mus musculus cDNA clone
IMAGE:5695440 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BM944329.1 GI:19427914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BM944329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    primer:
/Clone_lib="NIH_BMAP_EHOP"
/Clone_lib="NIH_BMAP_EHOP"
/tissue_type="whole brain"
/dev_stage="embryo 18.5 dpc"
/lab_host="Difful (T1 phage resistant)"
/lab_host="Difful (T1 phage resistant)"
/lab_host="Difful (T1 phage resistant)"
/note="Organ: brain; Vector: pyx-Asc; Site_1: Ecor I;
/note="Organ: brain; Soares, Genome Research, 6:791-806;
/note="Organ: brain; Vector: Brain (Corgan: brain)
/note="Organ: brain; Vector: pyx-Asc; Vector: The library tag
/note="Organ: brain; Site and the polya tail
/note site and the polya tail
/note site and the polya tail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:10090"
/clone="IMAGE:5695440"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contributed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 14-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
```

밁 Ş 8 Š 밁 Š В Š 밁 ρ 밁

```
В
                                                                                                                                                                    δ
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
1156 GAAGGAGCGGTATCCCAGCTGTGAGGACC-AGGACCTGCCTCCCCGGAATGATGTTGACC
                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                          CGAGCTGCGCAGTGAGGAGGAGAAACCCAAGAAAAGATGATATATTATCTGCTTTTTGGATCG
                                                                                                                                                                                                                                                                                  CGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCCAGAGCCTCC-TGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGA 915
                                                                                                                                                                                                                                                 TGACGTTCTGGAAAGCATGGCGTCTCTGGGCTGCTTCAGAGACCGCGAGCGGCTGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAPATTCAGAPACATCCTTGGTATCTGGGCGGGAPACACGAPACCAGACCCTTGCCTGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGA 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCAGAGCCTCCNTGAGAGGGATGATTGAAGTGGAGCCCGAGAAAAGGCTCAGTCTGGA 60
                                                                                                         AGAACTGCGAAGCGAGGAAAACCAAGAAAAGATGATCTATTATTTGCTTTTTGGATCG
                                                                                                                                                                                                                                                                                                                                                                                    GCCAGCCCTGGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCC 1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 604;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Robert Strausberg, Ph.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA Library preparation: Dr. M. Bento Soares, University of Iowa CDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa DNA Sequencing by: Dr. M. Bento Soares, University of Iowa Clone Distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nmalia; Eutheria; (bases 1 to 671)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          primer: pxx-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /CLUBE_ILLD WILLDWAFF_DVAFE_VV
//LISSUE type="whole brain"
//dev_stage="embryo 15.5 dpc"
//Lab_host="DH10B (T1 phage resistant)"
//Lab_host="DH10B (T1 phage resistant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone was contributed by the Brain Molecular Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:10090"
/clone="IMAGE:5701154"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="NIH_BMAP_EV0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18.2%;
90.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata; (Rodentia; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 543; DB 14;
Pred. No. 3.5e-65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ν
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                  1095
                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus.
```

```
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
BQ573641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661 CGCTGCCTTCT 671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCCCCGGAAGCGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGC 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGAGCGGTATCCTAGCTGTGAAGACCAAGGACCTGCCTCCTCGGAATGATGTTGACC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCTGCCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGA 1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCACTGGTCTGTCCTCCAGCCCTCTGAGCAGCCCAAGGAGTCCGGTCTTTTCCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCACGGGTCTGTCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCAC 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGAGCCAGGCGTGGAGATGAGGCTAGAGGCGGAGGCTCCCCAACTTCCAAAACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGACGGGCCTTGGAGATGGCCCAGCACAGTCAGAGATCCCGCAGCGTCAGTGGAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCGACGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCT 1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAGTCCATGGAAGTCCTCAGTATCACAGATGCTGGGAGTGGTGGCTCCCCCAGTGCCTA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAAGTCCATGGAAGTCCTGAGCATCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCA 1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACCTCGTAAGCGTGTGGATTCCCCCATGCTGAGCAGACACGGGAAAACGGAGGCCAGAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Iin, Univeristy of Iowa
cDNA Library preparation: Dr. M. Bento Soares, University of Iowa
cDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa
DNA Sequencing by: Dr. M. Bento Soares, University of Iowa
Clone Distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BQ573641 658 bp mRNA UI-M-FDO-byh-f-15-0-UI.rl NIH_BMAP_FDO Mus IMAGE:5718158 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 658)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, M
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nouse mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     primer: pYX-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone was contributed by the Brain Molecular Anatomy Project
/clone_ild="Nin_DNAL_ING"
/tissue_type="whole brain"
/dev_stage="embryo 12.5 dpc"
/lab_host="DH10B (T1 phage resistant)"
/lab_host="DH10B (T1 phage resistant)
/lab_host="DH10B (T1
                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="NIH_BMAP_FD0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:10090"
/clone="IMAGE:5718158"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST 19-JUN-2002
CDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
```

Q

880

N

Matches Query Match Best Local

591;

Conservative

0;

Similarity

18.1%;

BASE

COUNT

a

```
AAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCAT 1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCCAGAGCCTCCTGAGGGGAAT 879
                                                                                                                                                                                                                                                                                                                                                                                                                              GCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCCAGCCCTCT 1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGGAAGCGTGTGGATTCTCC 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAAGAAAAGATGATCTATTAGTTTTGGATCGGAAAGAGCGGTATCCTAGCTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCGAGTGAGGAGGAGAA 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTA 939
                                                                                                                                                                                                                                                                                                                                                                                                       GCACAGTCAGAGATCCCGCAGCGTCAGTGGAGCCTCCACTGGTCTGTCCTCCAGCCCTCT 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACAGATGCTGGGAGTGGCTCCCCCAGTGCCTACCAGACGGGCCTTGGAGATGGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGCCTTGGAGATGGCCCA 1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATGCTGAGCAGACACGGGAAACGGAGGCCAGAGCGGAAGTCCATGGAAGTCCTCAGTAT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGACCAGGACCTGCCTCCGGAATGATGTTGACCCACCTCGTAAGCGTGTGGATTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGA 1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGGGCTGCTTCAGAGACCGCGAGCGGCTGCACAGAGAACTGCGAAGCGAGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGCTTAGCCTGCCTTCCAATGGCGAGCTGGACCCTGACGTTCTGGAAAGCATGGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATC 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGGGCGGGAAACACGAACCAGACCCTTGCCTGGAGCCAGGCCCCAGGCCGCAGAGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATTGAAGTGGAGCCCGAGAAAAGG-TCAGTCTGGAGCAAATTCAGAAACATCCTTGGTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cloned directionally into pYX-Asc vector. The library to sequence located between the Not I site and the polyA ta is TGAGAGAGCC. This library was created for the University of Iowa Mouse Brain Molecular Anatomy Project (BMAP): 'Gene Discovery in the Developing Mouse Nervous System', supported by National Instututes of Mental Heal (NIMH), Hemin Chin, Ph.D., program coordinator."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 540.4; DI
Pred. No. 8e-65,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                              g
          and
                                         Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                          sapiens cDNA clone CS0DF029YC21
      Polayes,D
                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66;
                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                            EST 13-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tibrary tag
PolyA tail
                                                                                                                                                                                                                                                                                                                           658
                                                                                                                                                                                                                                                                                                                                                                  1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Health
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
COMMENT
                                           밁
                                                                            δã
                                                                                                                       멍
                                                                                                                                                          Ş
                                                                                                                                                                                                     В
                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                       ğ
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
      764
                                                                                  704
                                                                                                                         545
                                                                                                                                                              644
                                                                                                                                                                                                     485
                                                                                                                                                                                                                                             584
                                                                                                                                                                                                                                                                                    425
                                                                                                                                                                                                                                                                                                                       524
                                                                                                                                                                                                                                                                                                                                                                365
                                                                                                                                                                                                                                                                                                                                                                                                       464
                                                                                                                                                                                                                                                                                                                                                                                                                                               305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                65
                                                             TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                       TATGACGGCCG-GAAGSGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGCTGGTG
                                                                                                                     TTGGAGACCAGCTGTGGGTCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGGAGAAG
                                                                                                                                                          CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAA
                                                                                                                                                                                                                      AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGAACAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTCGCAGGTTGGCGACAGCTG
                                                                                                                                                                                                                                                                                TGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGGACGAG
                                                                                                                                                                                                                                                                                                                       TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                                                                                                            AGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                 AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                        TACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAAACAAAAAATATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Genoscope
Genoscope - Centre National de Sequencage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Full-length cDNA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP 191 91006 EVRY cedex - France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fliang@lifetech.com URL:
http://fulllength.invitrogen.com"
a 230 c 268 g 152 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 division of Invitrogen 9800 Medical Center Drive Rockville Maryland 20850, USA Fax: (1) 301 610 8371 Email:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /Note="Organ: Fetal brain; Vector: pCMVSPORT 6; 1st; cDNA was primed with a NotI-oligo(dT) primer. Five p end enriched, double-stranded cDNA was digested with and cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was constructed by Life Technologies Construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                week,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Technologies. Contact : Feng Liang Life Technologies,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="LTI_FL013_FBrn1"
/dev_stage="pooled tissue from
week, 24 week and 26 week)"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="CS0DF029YC21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17.7%;
81.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 527.6; DB 9
Pred. No. 3.8e-63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                post conception fetuses (20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               with Not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1st strand
823
                                       663
                                                                            763
                                                                                                                     604
                                                                                                                                                          703
                                                                                                                                                                                                                                         643
                                                                                                                                                                                                                                                                                                                                                                                                 523
                                                                                                                                                                                                                                                                                                                                                                                                                                        364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                                                                                                484
                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
```

2

VERSION KEYWORDS

EST

ACCESSION DEFINITION AL538014 RESULT

prime, mRNA AL538014 AL538014.1

Focus

AL538014 LTI\_FL013\_FBrn1

Homo 836

mRNA sequence.

GI:12801507

SOURCE

ORGANISM

Homo sapiens uman Ş В δĀ 밁 Š 밁 δÃ 밁 Ş 밁 Ş 밁 Ş В Ş 밁 Qy 밁 δÃ 밁

1360

541

1300

481

1240

421

1180

301

361

1060

181

121 940 62

241

밁

601

REFERENCE

Mammalia; Eutheria; P. 1 (bases 1 to 836)

Chordata; Primates; Jessee,J.

. \_

AUTHORS

```
Ş
                                         당
                                                                             Š
                                                                                                                           밁
                                                                                                                                                              õ
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
1166
                                                                                                                                                                     1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                       986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       884 GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGG 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         664
                                                                                                                             65
                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                             G
                                                                                                                                                 GAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGC 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGGCTCTGCCCTTCGACGATGACAACTTGCGACA-CTGCTGGAGAAGGTGAAGCGGGGC
GGCCGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCCGACGTCCTA 1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC
                                         AGTGAGGAGGAACCAAGAAAAGATGATATATTATCTGC-TTTGGATCGGAAGGAGCGG
                                                                               AGTGAGGAGGAGCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGG 1165
                                                                                                                         GAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGC 124
                                                                                                                                                                                                           GGCCGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTA 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGTTCCACATGCCGCACTTTATCCCGCCCSACTGCCAGARTCTGCTACGGGGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      National Institutes of Health, Mammalian Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plate: LLAM9494 row: n column: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: David N. Louis, M.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 936)
NIH-MGC http://mgc.nci.nih.gov/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5', mRNA sequence.
BF529630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BF529630 936 bp mRNA linear EST 11-DEC-206002043855F1 NCI_CGAP_Brn67 Homo sapiens cDNA clone IMAGE:4181581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BF529630.1 GI:11616993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               quality sequence start: 8 quality sequence stop: 568.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                               /note="Organ: brain; Vector: pCMV-SPORT6; Site_1: Not1; Site_2: Sall; Cloned unidirectionally. Primer: Oligo dT Average insert size 2.3 kb. Constructed by Life Technologies. Note: this is a NCI_CGAP Library."

a 238 c 318 g 94 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="IMAGE:4181581"
/clone_lib="NCI_CGAP_Brn67"
/tlssue_type="anaplastic oligodendroglioma with 1p/19q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /lab_host="DH10B (T1 phage-resistant)"
                                                                                                                                                                                                                                                                                                                17.5%;
97.6%;
                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                    Score 522.4;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                            .8e-62;
es 11; Indels
                                                                                                                                                                                                                                                                                                                                      DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                      Length 936;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 11-DEC-2000
                                                                                                                                                                                                                                                                                              u
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  습
:
```

```
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BQ086295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTGTGGATTCTCCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATG 1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGGAGATGAGGCTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCT 1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGGAGATGGCCCAGCAGAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTG 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGTCCTGAGCATCACCGATGCCGGGGGGTGGTTGCCCCTGTACCCCACCCGACGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGTCCTGAGCATCACCGATGCCGGGGGGGGGTGGTGGCTCCCCTGTACCCCACCCGACGGGCC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGA - CAGAGCGGAAGTCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGGGGCCCCCAGGGTGGGGGGCGCCGGGAAACAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTTCCTTTTCACCGGAGCCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGAGATGGCCCAGCACAG-CAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                    Dept of |
MA 02138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Melton,D., Brown,J., Kenty,G., Permutt,A., Lee,C., Kaestner,K., Lemishka,I., Scearce,M., Brestelli,J., Gradwohl,G., Clifton,S., Hillier,L., Marra,M., Pape,D., Wylie,T., Martin,J., Blistain,A., Schmitt,A., Theising,B., Ritter,E., Ronko,I., Bennett,J., Cardenas,M., Gibbons,M., McCann,R., Cole,R., Tsagareishvili,R., Williams,T., Jackson,Y., and Bowers,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BQ086295 510 bp mRNA linear EST 29-APR-20 1J20h01.y1 Melton Normalized Human Islet 4 N4-HLS 1 Homo sapiens cDNA clone IMAGE:6135408 5' similar to TR:060843 060843 PUTATIVE SERINE/THREONINE PROTEIN KINASE; mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                               Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Ave,
                                                                                                                                                                                                                   consortium (info@image.llnl.gov)
Seq primer: -40RP from Gibco
                                                                                                                                                                                                                                          Washington University Genome Sequencing Center This clone is available royalty-free through LLNL; please contact the IMAGE consortium (info@image.llnl.gov) for further information
                                                                                                                                                                                                                                                                                          Library was constructed by Dr. Douglas Melton DNA sequencing by:
                                                                                                                                                                                                                                                                                                                                        Tel: 617-495-1812
Fax: 617-495-8557
Email: dmelton@biohp.harvard.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Endocrine Pancreas Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                            High quality sequence stop: 445.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Douglas Melton, Klaus H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BQ086295.1
                                           /clone="IMAGE:6135408"
/clone_lib="Melton Normalized Human
                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                Location/Qualifiers
/tissue_type="Islets of Langerhans"
                            /sex="Both"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kaestner, & Hiroshi
                                                Islet 4 N4-HIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 29-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                      Cambridge,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243
```

```
. .
                                                                          밁
                                                                                                          Ş
                                                                                                                                                 B
                                                                                                                                                                                      Š
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
Matches 518; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                   449
 569
                                                                          509
                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                               269
                                                                                                                                                                                                                                                                 703
                                                                                                                                                                                                                                                                                                                                           643
                                                                                                                                                                                                                                                                                                                                                                                                                                                       209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                463 GAGACTGACGCCCAAGGAGCCCCGAAAGTTCTTCCGCCAGATTGTGTGTCTGCGCTGGACTT 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                GAAAAACAACCATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCT
                                                                                          CGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAAT--G
                                                                                                                                                 GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGG
                                                                                                                                                                                                                                                             ATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCCACAGCTACTCCATCTGCCACAGAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGA 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCGAAGTGGAGCCCG-AAAAAAGGCTCAGTCTGGAGCAAATTCAGAA 927
                                                                                                                                                                                                                         CCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAA 702
TCGAAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCCAATTCTGAA
                                                                        CGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATTGA
                                                                                                                                                                    GGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGG 822
                                                                                                                                                                                                                                                                                                                                                                           GAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTT 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLAM9490 row: e column: 13
High quality sequence stop: 587.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapbs-r@mail.nih.gov
Tissue Procurement: David N. Louis, M.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Robert Strausberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /lab_host="DH10B (T1 phage-resistant)"
/note="Organ: brain; Vector: pCMY-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 2.3 kb. Constructed by Life
Technologies. Note: this is a NCI_CGAP Library."
a 275 c 280 g 189 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism-"Homo sapiens"
/db_xref-"taxon:9606"
/clone-"IMAGE:4179828"
/clone_1lb-"NCI_CGAP_Brn67"
/tlssue_type="anaplastic oligodendroglioma with lp/19q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16.5%;
98.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 490.8; DB 12
Pred. No. 3.9e-58;
0; Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                     268
                                                                                                                                                 508
                                                                                                                                                                                                                         448
                                                                                                                                                                                                                                                             762
                                                                                                                                                                                                                                                                                                  388
                                                                                                                                                                                                                                                                                                                                                                           328
                                                                                                                                                                                                                                                                                                                                                                                                                642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
```

```
RESULT 13
BF529174
                                                                                                   SOURCE
                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                       KEYWORDS
                                                                                                                                                VERSION.
                                                                                                                                                                 CCESSION
                                                                                                                                                                                                                               Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 510; Conserv
                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1777 TCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCC 1836
                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>س</u>
                                                                                                                                                                                                                                                                                                                                               CCTGGCAGACGAGAAGAACGGGGCCCAGAC 2286
                                                                                                                                                                                                                                                                                                                                                                                                       AGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCCAGCCCTCCGTGCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGTCACAGAGCCAGCTT 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACAT 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGTCCTCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAA 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGGCAGACGAGAAGAACGGGGCCCAGAC 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACAT
Homo sapiens
Homo sapiens

Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 898)

NIH-MGC http://mgc.nci.nih.gov/.
                                                                                                                                                             br529174
                                                                                                                                                                                 898 bp 602042051F1 NCI_CGAP_Brn67 Homo 5', mRNA seguero
                                                                                                     human.
                                                                                                                                            BF529174.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Organ: Pancreas; Vector: pSPORT1; Site_1: Not 1; Site_2: Sal 1; Starting library constructed using SuperScript Plasmid Library kit (Life Technologies). cDNA made by oligo-dT priming. Size-selected by column fractionation; average insert size 1.08 kb. Library was amplified once on solid support and plasmid DNA from library was prepared. The library DNA was normalized by method #4 from Bonaldo, Lennon, and Soares 1996 Genome Research 6:791-806; 0.5 microgram single-stranded library plasmid DNA was mixed with 5 micrograms PCR product representing library inserts and hybridized to an Ecot of 20. Single-stranded (unhybridized) plasmids were isolated by hydroxyapatite chromatography and used to make this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            library."
a 171 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /lab_host="DH10B"
                                                                                                                                            GI:11616455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 510; DB; Pred. No. 1.40; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              136 g
                                                                                                                                                                                                      sapiens cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.4e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 14;
                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 510;
                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                      IMAGE: 4179828
                                                                                                                                                                                                                         EST 11-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2136
                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

REFERENCE AUTHORS

RESULT 14 BQ444032

900

đđ

mRNA

linear

EST

29-MAY-2002

멍 õ 밁 Š 밁 Š 밁 Q 망 Š 밁 δã 밁 οy 밁 δÃ Вþ Ş

```
VERSION
KEYWORDS
                                                                                                                                                        Ş
                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
밁
                                                 S
                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
191
                                                      539
                                                                                                             131
                                                                                                                                                                 479
                                                                                                                                                                                                                                                                            419
                                                                                                                                                                                                                                                                                                                                                                                    359 CATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAG 418
                                                                                                                                                                                                                     71
                                                                                                                                                                                                                                                                                                                                11 CACGTGCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTATACTTGGTTCTTGAG 70
                                                                                                                                       GAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCCACAGCTACTCC 538
ATCTGTCACAGAGACTTGAAGCCAGAGAACCTGCTGTTGGATGAGAAAAAACAACATCCGC
                                                                                                                                                                                                                     CACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCAAG 478
                                                   ATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAAAAAACAACATCCGC 598
                                                                                                       GAGGCCCGGAAGTTCTTCCGCCAGATCGTGTCAGCACTGGACTTCTGCCATAGCTACTCC 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA Library preparation: Dr. M. Bento Soares, University of Iowa cDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa DNA Sequencing by: Dr. M. Bento Soares, University of Iowa Clone Distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
This clone was contributed by the Brain Molecular Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 600)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UI-M-EWO-bxi-p-15-0-UI.r1 NIH_BMAP_EWO Mus musculus cDNA clone
IMAGE:5708798 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq primer: pYX-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BQ444032
BQ444032.1 GI:21247144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     145
                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="NH_BMAP_EWO"
/tlssue_type="whole brain"
/dev_stage="embryo 15.5 dpc"
/lab_host="DH10B (T1 phage resistant)"
/lab_host="DH10B (T1 phage resistant)"
/lab_host="DH10B (T1 phage resistant)"
/note="Organ: brain; Vector: pyx-Asc; Site_1: EcoR I;
/note="Organ: brain; Vector: pyx-Asc; Site_1: EcoR I;
/note="Organ: brain; Vector: pys-Asc; Site_1: EcoR I;
/note="Organ: brain; Vector: phage resistants of the seconding to
Bonaldo, Lennon and Soares, Genome Research, 6:791-806,
1996. Denatured mRNa was size fractionated on a 1% agarose
gel. First strand cDNA synthesis was primed with a moligo-dT primer containing a Not I site. Double stranded cDNA was size selected according to mRNA size fraction,
ligated with EcoR I adaptor, digested with Not I, and then cloned directionally into pyx-Asc vector. The library tag sequence located between the Not I site and the polyA tail sequence located between the Not I site and the polyA tail (BMAP): 'Gene Discovery in the Developing Mouse Nervous System', supported by National Institutes of Mental Health (NIMH), Hemin Chin, Ph.D., program coordinator."

145 a 156 c 173 g 125 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:10090"
/clone="IMAGE:5708798"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16.4%;
91.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tion/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 6.2e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                              49; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 600;
                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
250
                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
BF796285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                     Query Match
Best Local
  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAGGCTCAGTCTGGAGC-AATTCAGAAACATCCTTGGTATCTGGGCGGGA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAA 898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTTGCTGGGGGGGCTCTGCCCTTT 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGA 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCCGTCTTCCACATGCCC 838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGG 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCGCAGACTTTGGTATGGCGTCCCTGCAAGTGGGGGACAGCCTCCTGGAGACCAGCTGC 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTTCATCCCTCCAGACTGCCAGAGCCTCCTGAGAGGGGATGATTGAAGTGGAGCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGACGAC - ACCTGCGCCAGCTACTGGAGAAGGTGAAACGTGGGGTCTTCCACATGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGACATGTGGAGCTGTGGAGTCATCCTATTTGCCCTTGCTGGGGGGGCACTGCCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGTCCCCCATTACGCANGTCCAGAGGTGATCAAGGGGGAAAAGTATGATGGCCGCCGG
572;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Louis Staudt, M.D., Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF796285.1 GI:12101339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BF796285
602258590F1 NIH_MGC_85 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                             http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uman
                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 753)
                                                                                                       156
                                                                                                                                                                                                                                                                                                                                                                                                    e: LLAM9956 row: c column: quality sequence stop: 691.
  Conservative
                                                                                              /Clone_lib="NIH_MGC_85"
/tissue_type="lymphoma, cell line"
/lab_host="DH10B (phage-resistant)"
/lab_host="DH10B (phage-resistant)"
/note="organ: lymph; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.867 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
a 212 c 262 g 123 t
                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                             /clone="IMAGE:4341838"
                                                                                                                                                                                                                                                                                                                                      ∕organism≃"Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                ocation/Qualifiers
                   16.48;
0;
                   Score 487.8; DB 12; Pred. No. 1.1e-57;
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA clone
  12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                       Length 753;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMAGE: 4341838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 12-JAN-2001
7;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5,
```

Ş

```
밁
                  δ
                                    밁
                                                  Š
                                                                        8
                                                                                        Ş
                                                                                                           밁
                                                                                                                        Š
                                                                                                                                             밁
                                                                                                                                                            δÃ
                                                                                                                                                                                밁
                                                                                                                                                                                                Q
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                1243
                                                                                                                                                                                                   1183
                                                                                                                                                                                                                                     1123
                                                                                                                                                                                                                                                                      1063
                                                                                                                                                                                                                                                                                                           1003
1303 CGATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGCCCTTGGAGATGGCCCAGCA 1362
                                                                                                                                                                                                                   347
                                                                     467
                                                                                                                                                                                 407
                                                                                                           526
                                                                                                                                                                                                                                                      287
                                                                                                                                                                                                                                                                                          227
                                                                                                                                                                                                                                                                                                                             167
                                                                                                                                                                             CANGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCAT 1242
                                                                                                                                                                                                                                                   GCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC 1302
                                                                                                                                                                                                                 AGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGA 1182
                                                                                                                                                                                                                                                                                               GCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACT 1062
                                                                                                                                                                                                                                                                                                                          CGATGCCGGGGGTGGTGGCTCCCCTGTACCCACACGACGGCCTTTGGAGATGGCCAGCA 585
                                                                                                                                            GCTGAGTCGTCACGGGAAGCGGCGA-CAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC
                                                                                                                                                                                                                                                                                        GCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACT 286
                                                                                                                                            525
```

. -

```
Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             on:
    and is
                                                                                                                    206.6
200.2
198.6
198.6
198.6
182.6
182.6
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
1177.8
11
    103
102.4
98.2
98.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, serived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     441362 seqs, 153338381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-003-690-3
2334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           April 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 atgtcgtccggggccaagga.....ccaacgggacccctctgccc 2334
                                                                                                                                                          Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
/cgn2_6/ptodata/1/ina/5B_COMB.seq:*
/cgn2_6/ptodata/1/ina/5B_COMB.seq:*
/cgn2_6/ptodata/1/ina/6B_COMB.seq:*
/cgn2_6/ptodata/1/ina/BCTUS_COMB.seq:*
/cgn2_6/ptodata/1/ina/Dackfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
  213
2132
2132
2132
1429
1429
1507
1544
2060
1599
1599
2610
2610
2610
2549
1302
1344
                                                                                                                                                                                                                                                                                                                 3364
1647
1929
1742
2652
2761
1736
1783
2698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2003, 20:17:06; Search time 54.0237 Seconds (without alignments)
13249.433 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                      US-08-557-006C-38

US-08-557-006C-39

US-08-557-006C-37

US-08-557-006C-37

US-08-557-006C-36

US-08-577-298-1

US-08-557-006C-44

US-09-159-385-3

US-09-159-385-3

US-09-186-277-3
US-09-159-385-3
US-09-186-277-3
US-09-186-277-4
US-09-186-277-4
US-09-186-277-4
US-09-523-849-4
US-09-256-465-1
US-09-256-465-1
US-09-257-322-3
US-09-257-322-3
US-09-257-322-3
US-09-187-322-3
US-09-187-322-3
US-09-182-751-1
US-09-467-082-3
US-08-755-728-1
US-08-755-728-1
US-08-755-728-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-359-161-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-930-181-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  882724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                                                         Sequence
Sequence
                                      Sequence
                                                                                               Sequence
                                                                                                                      Sequence
                                                                                                                                      Sequence
                                                                                                                                                          Sequence
                                                                                                                                                                             Sequence
                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                    Sequence
                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                 44,
                                                                                                                                                                                                                                                                                                                                                    38, Appl
39, Appl
24, Appl
37, Appl
36, Appl
                                                                                                                                                                                                                                                                                                                 , Appli
1, Appl
Appli
                                                                                                                                                                                                                                                                                             Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appli
                                                                                                                                                                                                                                                                          Appli
```

4.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
93	93	93.8	94.2	95	96.2	96.2	96.8	96.8	97	97.2	.98	98	98	98	98	98	98.2
4.0	4.0	4.0	4.0	4.1	4.1			4.1	4.2	4.2	4.2	4.2	4.2		4.2		4.2
1962	1962	5228	1466	3972	1282	1282	5886	4935	2061	2104	4165	4162	4162	4162	4162	4162	1244
4	4	4	N	4	4	N	4	N	4	4	_	4	w	w	w	N	. 4
US-09-488-364-4	US-08-924-183-4	US-09-428-711A-15	US-08-749-902-2	us-09-770-170-1	us-09-272-796-12	US-08-878-989-12	US-08-810-712-9	US-08-631-097-3	us-09-800-960-1	US-09-313-930-1	US-07-951-715A-26	US-09-547-422-26	US-08-459-444-26	US-08-459-504B-26	US-08-459-595A-26	US-08-459-448A-26	US-09-283-011-1
Sequence 4, Appli	Sequence 4, Appli	Sequence 15, Appl	Sequence 2, Appli	Sequence 1, Appli	Sequence 12, Appl	Sequence 12, Appl	Sequence 9, Appli	Sequence 3, Appli	Sequence 1, Appli	Sequence 1, Appli	Sequence 26, Appl	Sequence 1, Appli					

ALIGNMENTS

## g Q 밁 ₽ ; ORGANISM: Homo sapiens ; FEATURE: ; NAME/KEY: CDS ; LOCATION: (106)..(2112) US-09-930-181-1 Š 닭 δÃ 밁 Ş RESULT 1 US-09-930-181-1 Sequence 1, Application US/09930181 Patent No. 6455292 GENERAL INFORMATION: Query Match 41.4%; Best Local Similarity 70.1%; Matches 1485; Conservative SOFTWARE: PatentIn version 3.0 SEQ ID NO 1 LENGTH: 2908 TYPE: DNA APPLICANT: Origene Technologies TITLE OF INVENTION: Full-Length Serine Protein FILE REFERENCE: 160 101 VI CURRENT APPLICATION NUMBER: US/09/930,181 CURRENT FILING DATE: 2001-08-16 NUMBER OF SEQ ID NOS: 18 134 CGCAGCACGCGCAGTATGTTGGGCCCCTACCGGCTGGAGAAGACGCTGGGCCAAGGGGCAGA 193 134 CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 193 374 314 314 254 194 194 254 74 CCCAGCACGCCCAATATGTGGGGCCCCTATCGGCTGGAGAAGACGCCTGGGCAAAGGACAGA 133 TGAACCGGGAGAAGCTGTCGGACTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGA TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGA 0 Score 966.6; Pred. No. 3. Mismatches 439; 2e-212; DB 4; Kinase in Brain and Pancreas Length 2908; Indels 195; Gaps 433 373 373 313 253 313 253

6

밁

434

374

434

ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGG

AGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGG

AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG

```
Matches 1484; Conservative
0;
Mismatches 440; Indels 199;
                                                                                                                                                                                                                                        GAG 2113
                                                                                                                                                                                                                                                                                  2AGG 1993
||||
|AGG 1876
                                                                                                                                                                                                                                                                                                                     TCA 1933
                                                                                                                                                                                                                                                                                                                                      ATCG 1873
                                                                                                                                                                                                                                                                                                                                                                                          CAG 1753
|||
CAG 1636
                                                                                                                                                                                                                                                                                                                                                                                                                                              TCG 1633
|||
TCG 1516
                                                                                                                nd Pancreas
                                                                                                                                                                                                                                                                                                                                                                         CCC 1576
                                                                                                                                                                                                                 CCC 2173
Gaps
                                                                                                                                                                                                     ACT 2038
                                                                                                                                                                                                                               3GG 1978
                                                                                                                                                                                                                                                                                                            rcc 1816
                                                                                                                                                                                                                                                         \GA 1918
                                                                                                                                                                                                                                                                      3TG 2053
                                                                                                                                                                                                                                                                                                                                                                 AGG 1696
                                                                                                                                                                                                                                                                                                                                                                                                                                  TC 1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA 1462
7;
```

1454 GTGGGGCGCCGGGAGCAGCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCC 1513		1379 TCAGCAGCCCCCG 1391 1379 TCAGCAGCCGCCCGG 1391	1334 TAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGG 1393	1274 AGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC 1333	1214 TCACCGATGCCGGGGTGGTGCCCCTGTACCCCACCGGACGGCCTTGGAGATGGCCC 1273	1154 CCATGCTGAGCCGTCACGGGAAGCGGCAGCAGAGCGGAAGTCCATGGAAGTCCTGAGCA 1213	1094 AGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC 1153	1034 ACCAAGAAAGATGATATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG 1093	974 CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGA 1033	914 CCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGATGGCAT 973	854 ACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCC	794 TGATCGAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 853 	734 GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA 793 	674 TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC 733 	614 AAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAAGTCATCCTCTTCGCCCTGC 673	554 GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG 613	494 ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA 553	
				٠	•						: :							
											11.				•			*-
Qu Be	; ; ;		 SE	z 0 0 °		RESULT US-09- ; Seque	Db Q	g dg	B &	P &	p g	B 5	P P 9	Db QY	) pb 03	Db QY	D D	₽ ₽
Query Match 40.7%; Score 951; DB 4; Length 3364; Best Local Similarity 69.9%; Pred. No. 1.2e-208;	; NAMEKEY: CDS ; LOCATION: (482)(2239) US-09-930-181-3	TYPE: DNA ORGANISM: Homo sapiens	SOFTWARE: Patentin version 3.0 SEQ ID NO 3 LENGTH: 3364	CURRENT APPLICATION NUMBER: US/09/930,181 CURRENT FILING DATE: 2001-08-16 CURRENT OF SEQ ID NOS: 18	APPLICANT: Origene Technologies  APPLICANT: Origene Technologies  TITLE OF INVENTION: Full-Length Serine Protein Kinase in Brain an	RESULT 2 US-09-930-181-3 ; Sequence 3, Application US/09930181 ; Patent NO 6455292	21/4 TGGCAGACGAGAACGG 2192 	TGGTGGAGACCATCCAGGCC		1994   INSPIRATION CITATION NO STATE OF THE PROPERTY OF THE	000000	TGCACG		AGTCGT		GAGGGA		

Š 밁 Q 밁 δÃ 밁 Qy 멍 Ş 밁 Q 밁 Q B ρy 밁 Š 밁 Š 밁 δÃ 밁 Ş 밁 Ş 밁 QΥ 밁 δÃ В Qy В δÃ 밁 20 밁

1514 CCCCAGGCTCCCCCCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1573

δÃ

74 CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 133

1209	TCTCCCATGCTGAGCCGTCACGGGAAGCGGGAAGCGCGAAGCGGAAGTCCATGGAAGTCCTG	1150	γQ
1149 1330	TGTGAGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGAT	1090 1271	B 5
1089 1270	GAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGC	1030 1211	Db Qy
1029 1210	GCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAG	970 1151	D Qy
969 1150	GTAGCCATGCGGAGCCTGCCATCCAACGGAGACTGGACCCCGACGTCCTAGAGAGCATG 	1091	B 8
1090	TGGTACCTAGGCGGGAAACACGAGCCZ 	1037	Db Q
4 0	GGATGATCGAGTGGAGCCCGAAAAAAGCTCAGTCTGGGCAAATTCAGAAACATCCT 	7 9	Дb
789 976	AAACGGGGCTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGG		g dy
729 916	CTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTG	5 7	D Qy
669 856	GGGGAAAATATGATGGCCGCCGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCC		ρ <b>δ</b>
609 796	GACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAG	550 737	P 84
549 736	TTGGATGAGAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGG	490 677	D 09
489 676	CTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAAACCTGCTT	430 617	B 8
429 616	AAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTCTGCG	370 557	ρ γο
369 556	ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTA	314 497	D 24
313 496	TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT	254 437	B 8
253 436	TGAACCGGGAGAAGCTGTCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC	194 377	B 8
193 376	CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAAGGTCGCCATCAAGATCG	134 317	B 63
316		257	망

	2170 GCCCTGGCAGACGAGAAGAACGG 2192 	Qу
2169 2161	2110 CGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAG	Qу
2109 2101	2050 GGTGGTGGCATCTACTCCGTCACCTTCACTCTCAGTCTCGGGTCCCAGCCGTCGGTTCAAG	Оу
2049 2041	1990 CAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGGCCCTCCCCGCGACGGGACGGCAGCGGA	d dy
1989 1999	1930 TTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTC	Qу
1929 1939	1870 ATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGC	Qу
1869 1879	1810 AAAGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGGCAGCATCAAAGCAGAC	Db
1809 1819	1750 CCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGAC	у: Р Qy
1749 1759	1690 CCTCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACG	ob Oy
1689 1699	1630 GTCGGGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCC	Ag Ag
1629 1639	1570 CCCCGGGCAGTCCCACCGGGACCCCGGGGACAACACCACCCCCAGCCCCGGCGG	D Qy
1569 1585	1510 GGCCCCCAGGCTCCCCGCGCTCTTGGCGGGACCCCCTTGCACTCGCCCTCTGCACACG	Qy
1509 1558	1450 AGGGGTGGGGGCGCCGGGAGCAGCCCCCAGTGCCCGCTCCACACCCCTGCCC	Qy db
1514	1515	Дb
1449	1390 GAGGCTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCC	Qy
1389 1514	1330 CCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGAT	Db Qy
1329 1501	0 GCCCAGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGC	Qy
1269 1441	1210 AGCATCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCACCC	Qу
1390	1331 TCCCCGATGCTGAACCGGCACGGCAAGCGGCGGCCAGAACGCAAATCCATGGAGGTGCTC	DЬ

GENERAL INFORMATION:

tent No.

44, Application US/09101146
o. 6124125

```
APPLICANT: Dartmouth College, St. Vincents Institute of APPLICANT: Medical Research, Kemp et al.
TITLE OF INVENTION: No. 6124125el AMP Activated Protein Kinase NUMBER OF SEQUENCES: 64
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                      212 CGGAGTCGGTGCTGAT---GAAGGTGGAGCCGGGAGATCGCCATCCTGAAGCTCATCGAAC 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 448
                                                                                                AAAAGGAGAGTCGACGTCTGTTCCAGCAGATCCTTTCTGGTGTGGACTATTGTCACAGGC
                                                                                                                                                                                             GAAGCCTGGACGTCGGGAAAATCCGCAGAGATCCAGAACCTGAAGCTTTTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
       ATATGGTGGTCCACAGAGATTTGAAAACCTGAAAACGTCCTGCTTGATGCACACATGAATG
                                                   ACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA 508
                                                                                                                                                                                                                                               TGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                             ACCCTCATATAATCAAACTGTACCAGGTCATCAGTACACCGTCTGATATTTTCATGGTCA
                                                                                                                                                                                                                                                                                                                                          ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAAGCACGAGTTGACTGGACATAAAGTTGCTGTGAAGATACTCAACCGGCAGAAGATTC 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGGCCACTACATCCTGGGGGACACGCTGGGCGTCGGCACCTTCGGGAAAGTGAAGGTGG 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WORDPERFECT 6.0 FOR WINDOWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISKETTE, 3.5 INCH, 1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 206.6; DB 3;
Pred. No. 2.4e-38;
0; Mismatches 339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STORAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1647;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                               388
       457
                                                                                                                                                                                                337
                                                                                                                                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                                                                                                                             277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          닭
                                              δÃ
                                                                                                                                         Ş
                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ДЬ
                                                                                                밁
                                                                                                                                                                                                                                       ğ
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                     S
V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-359-161-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
US-09-359-161-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 V
                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 4
LENGTH: 1929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Application US/09359161A Patent No. 6342656
                                                                                                                                                                                                                                                                                                                                                                                      Matches 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Yang, Hong
APPLICANT: Cooley, Michael
APPLICANT: Cooley, Michael
APPLICANT: Downle, Bruce
APPLICANT: Downle, Bruce
APPLICANT: The Regents of the University of California
APPLICANT: The Regents of the University of California
TITLE OF INVENTION: Regulation of Source-Sink Relationships and Responses
TITLE OF INVENTION: to Stress Conditions in Plants
FILE REFERENCE: 023070-095900US
CURRENT APPLICATION NUMBER: US/09/359,161A
CURRENT FILING DATE: 1999-07-21
NUMBER OF SEQ ID NOS: 7
CONTRIBUTE DETAILS US.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Bradford, Kent J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Lycopersicon esculentum FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: Lycopersicon esculentum plant homolog of yeast OTHER INFORMATION: SNF1 kinase subunit of protein kinase (LeSNF1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          518
       249
                                            259 CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG 318
                                                                                                  189
                                                                                                                             202 GAGAAGCTGTCGGAGTCGG----TGCTGATGAAGGTGGAGCGGGAGATCCGCCATCCTGAAG 258
                                                                                                                                                                                                129
                                                                                                                                                                                                                                       142 GTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGG 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            509 TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 568
                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                     CTGAAGTAGACATCTGGAGCAGCGGGGTCATTCTCTATGCTTTGCTGTGGGAACTCTCC
TTGTTCATGCATCCTCATATTATACGGCTTTATGAGGTCATAGAGACACCATCAGATATA
                                                                                             CGAAAAATCAGGAATATGGACATGGAGGAGAAAGTCCGTAGAGAAAATCAAAATATTGAGA 248
                                                                                                                                                                                        GTTAAAATAGCTGAACATACGTTAACAGGGCACAAAGTTGCTGTCAAGATTCTTAATCGT 188
                                                                                                                                                                                                                                                                                      GACTCATTTTTACGGAACTATAAACTCGGGAAAACACTTGGCATTGGATCGTTCGGCAAA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTTTGATGATGACCACGTGCCAACTCTTTTTAAGAAGATATGTGACGGGATATTTTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTGGGGGCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGTGGCTCGCCCAATTATGCTGCACCAGAAGTAATTTCAGGAAGATTCTACGCAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAAGATAGCCGACTTCGGTCTTTCAAACATGATGTCAGATGGTGAATTTTTAAGAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTATGAAGAGGGCCACAATAAAAGATATCAGGGAACATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCCTCAGTATTTGAATCCCTCTGTAATAAGCCTTTTGAAGCATATGCTGCAGGTAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dahal,
                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peetambar
                                                                                                                                                                                                                                                                                                                                                                                                          8.6%;
                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                       Score 200.2; DB 4; Pred. No. 7.5e-37;
                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                      353;
                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1929;
                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  517
                                                                                                                                                                                                                                                                                                                                                                                 ۲
```

밁 ð В δÃ 밁 Š 밁 ρ

398

Ş В

218 269 158 밁 δÃ 밁 Š

98

152

38

US-09-101-146-44

TOPOLOGY:

ö

Linear

TELEFAX: (856) 810-1454 INFORMATION FOR SEQ ID NO:

REFERENCE/DOCKET NUMBER: DC TELECOMMUNICATION INFORMATION: TELEPHONE: (856) 810-1515

DC-0050

APPLICATION NUMBER: PN7450
FILING DATE: 8 JAN 1996
ATTORNEY/AGENT INFORMATION:
NAME: Jane Massey Licata
REGISTRATION NUMBER: 32,257

PRIOR APPLICATION DATA:

FILING DATE: OC CLASSIFICATION:

SOFTWARE: WORDPERFECT CURRENT APPLICATION DATA:

OPERATING SYSTEM: WINDOWS 95

IBM PC

APPLICATION NUMBER: US/09/101,146

October 7, 1998

COMPUTER READABLE FORM: MEDIUM TYPE: DISKETT

COUNTRY:

USA

Z

08053

STREET: 66 E. CITY: Marlton ADDRESSEE:

E: Jane Massey Licata, Esq

COMPUTER:

SEQUENCE CHARACTERISTICS:

LENGTH:

1647

TYPE: Nucleic acid STRANDEDNESS: Single

Query Match Best Local Similarity Matches 423;

8.9%; 55.3%;

Conservative

0;

```
US-08-557-006C-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                            SOFTWARE: Pace
SEQ ID NO 38
SEQ TH: 1742
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 38, Application US/08557006C Patent No. 6258547
   Matches
                                                                                                                                                                                                                                                                                                                   APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
APPLICANT: FORDER: ROBERT A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NGAP/PHH37588/UST
CURRENT APPLICATION NUMBER: US/08/557,006C
CURRENT FILING DATE: 1996-03-06
CURRENT FILING DATE: 1996-03-06
                                                                             -08-557-006C-38
                                                                                                                                                                                        PRIOR FILING DATE: 19
NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: PCT, PRIOR FILING DATE: 1994-05-20
                                                                                         TYPE: DNA ORGANISM: Human AMP protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          309
                   Local Similarity
                                                                                                                                                                                                                                                 FILING DATE: 1994-(
APPLICATION NUMBER:
FILING DATE: 1993-(
                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTG 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAGTCGACCCAATGAAGCGAATGACTATTCCTGAGATTCGCCTGCACCCTTGGTTCCAA 848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATGCTGGCCCTGAGGTAGATGTATGGAGCTGTGGTGTTATTCTTTATGCTCTTCTCTGT 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGAAGACAAGTTGCGGAAGCCCAAACTATGCTGCCCCCAGAGGTTATATCAGGTAAATTG 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAA 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCCTGGACTTC 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATATACTCTGCCCAGCCATTTATCAGCTGGTGCGAGGGATTTGATTCCGAGGATGCTT 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCACCCTTCCGTTTGACGATGAAAACATACCCAATCTTTTAAGAAAATAAAGGGTGGA 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATGGAATGTGAAGATCGCAGATTTTGGTTTGAGCAATATCATGCGCGATGGTCATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTC 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCCATAGAAACATGGTGGTTCATAGAGACCTTAAGCCTGAAAACCTCCTTCTGGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATTGCAGGAGGATGAAGCTCGTAACTTTTTTCAGCAGATAATTTCTGGTGTGGAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATGTTGTGATGGAGTATGTGAAATCTGGCGAGTTATTTGATTACATTGTTGAGAAGGGC 368
 418;
                                                                                                                                                                        PatentIn
                                                                                                                                                                                                                                                                                                                                                                                                                                        Beri, Rajindar K.
 Conservative
                                                                                                                                                                        Ver.
                                                                                                                                                                                                            1993-08-31
                                                                                                                                                                                                                                               1993-05-21
                 8.5%;
                                                                                                                                                                                                                                                                                                       PCT/GB94/01093
                                                                                                                                                                                                                             GB 9318010.7
                                                                                                                                                                                                                                                                   GB 9310489.1
0;
                 Score 198.6; DB 4; Pred. No. 1.7e-36;
Mismatches
344;
                                 Length
Indels
                                     1742;
Ψ
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             428
```

ş

```
d
                                                 APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
FITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROFILE REFERENCE: NGAP/PHM37588/UST
CURRENT FILING DATE: 1996-03-06
CURRENT FILING DATE: 1996-03-06
PRIOR APPLICATION NUMBER: US/08/557,006C
PRIOR APPLICATION NUMBER: PCT/GB94/01093
PRIOR FILING DATE: 1994-05-20
PRIOR FILING DATE: 1994-05-20
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR FILING DATE: 1993-05-21
PRIOR APPLICATION NUMBER: GB 9318010.7
PRIOR FILING DATE: 1993-08-31
PRIOR FILING DATE: 1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
US-08-557-006C-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION: APPLICANT: Beri, R
                                                                                                                                                                                                                                                                                                                                                                                  Sequence 39 Patent No.
SOFTWARE: 1
SEQ ID NO 39
                                          NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTGGTGGGGGGCTCTGC 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTAAGATAGCTGACTTCGGACTCTCTAATATGATGTCAGATGGTGAATTTCTACGAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGC 808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGTTCGACGATGAGCACGTGCCTACGCTCTTTAAGAAGATCCGAGGGGGGTGTGTTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGAGGTTGATATCTGGAGCTGTGGTGTTATCCTGTATGCCCTTCTCTGTGGCACCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTCCATCTGCCACAGAGACCTAAAGCCCGGAGAACCTGCTTTTGGATGAGAAAAACAACA 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTTGGACTTCTGCCACAGCT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGAATATGTGTCTGGAGGTGAATTGTTCGACTACATCTGTAAAACACGGGAGGGTTGAAG 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCTCATATTATCAAACTCTACCAAGTGATCAGCACTCCAACAGACTTTTTTATGGTAA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGTTTAGATGTTGGAAAAATAAAACGAGAAATTCAAAATCTTAAACTCTTTCGTC 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGAACATCAATTGACAGGCCATAAAGTGGCAGTTAAGATCTTAAATAGACAGAAGATTC 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCCGGAGTATCTCAACCGTTCTATTGCCACTCTGCTGATGCACATGCTGCAGGTGGACC 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGTGGATCGCCAAATTATGCAGCACCGGAGGTCATCTCAGGAAGGCTGTATGCGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAAATATGATGGCC 628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATGGTTGTCCACAGGGACCTGAAGCCAGAGAACGTGTTGCTGGACGCCCAGATGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGTGGAAGCTCGCCGGCTCTTCCAGCAGATTCTGTCTGCCGTGGACTACTGTCACAGGC 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAGT----CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 268
                                                                                                                                                                                                                                                                                                                                                                                     39, Application US/08557006C
o. 6258547
                     PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                        Rajindar K.
                                                                                                                                                                                                                                                                      PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     457
```

```
Gaps
                                                                                                                                                                                                                         808
                                                                                                                                                                                                                                                                                                                                                           889
                                                                                                                                                                                                                                                                                                                                                                                                                             628
                                                                                                                                                                                                                                                                                                                                                                                                                                                               524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     268
                                                                                                                                                                                         764
                                                                                                                                                                                                                                                          704
                                                                                                                                                                                                                                                                                                                           644
                                                                                                                                                                                                                                                                                                                                                                                            584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
γ
                                   밁
                                                                Q
                                                                                                   Вþ
                                                                                                                                   Ş
                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: cDNA; OTHER INFORMATION: liver AMP protein kinase
US-08-557-006C-24
                                                                                                                                                                      밁
                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AM
FILE REFERENCE: NCAP/PHN37588/UST
CURRENT APPLICATION NUMBER: US/08/557,006C
CURRENT FILING DATE: 1996-03-06
PRIOR APPLICATION NUMBER: PCT/GB94/01093
PRIOR FILING DATE: 1994-05-20
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR FILING DATE: 1993-05-21
PRIOR FILING DATE: 1993-05-21
PRIOR FILING DATE: 1993-08-31
NUMBER OF SEQ ID NOS: 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 24
LENGTH: 2761
TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 8.5%;
Best Local Similarity 54.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 418;
     749
                                                                                                     601
                                                                                                                                                                                                       569
                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                        509
                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                         449
                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                            389
                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGAGGTTGATATCTGGAGCTGTGGTGTTATCCTGTATGCCCTTCTTGTGGCACCCTCC
                                                           CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACA 748
                                                                                                                         GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTGGGGGGCTCTGC
                                                                                                                                                                                         GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                       CTAAGATAGCTGACTTCGGACTCTCTAATATGATGTCAGATGGTGAATTTCTACGAACTA
                                                                                                                                                                                                                                                                                                                         CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTTGGACTTCTGCCACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCCTCATATTATCAAACTCTACCAAGTGATCAGCACTCCAACAGACTTTTTTATGGTAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGTTTAGATGTTGGAAAAATAAAACGAGAAATTCAAAAATCTTAAACTCTTTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGAACATCAATTGACAGGCCATAAAGTGGCAGTTAAGATCTTAAATAGACAGAAGATTC 180
TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC
                               CGTTCGACGATGAGCACGTGCCTACGCTCTTTAAGAAGATCCGAGGGGGGTGTGTTCTACA
                                                                                                                                                                    GCTGTGGATCGCCAAATTATGCAGCACCGGAGGTCATCTCAGGAAGGCTGTATGCGGGTC
                                                                                                                                                                                                                                                                     TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 568
                                                                                                                                                                                                                                                                                                                                                                         AGGTGGAAGCTCGCCGGCTCTTCCAGCAGATTCTGTCTGCCGTGGACTACTGTCACAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGAATATGTGTCTGGAGGTGAATTGTTCGACTACATCTGTAAACACGGGAGGGTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGGACACTACGTGCTGGGGACACCCTGGGCGTCGGCACCTTCGGCAAAGTGAAGATTG
                                                                                                                                                                                                                                                                                                      ACATGGTTGTCCACAGGGACCTGAAGCCAGAGAACGTGTTGCTGGACGCCCAGATGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAGT - - - CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Beri, Rajindar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 198.6; DB 4; Pred. No. 1.9e-36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches 344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AMP-ACTIVATED PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
808
                                                                                                  660
                                                                                                                                   688
                                                                                                                                                                    600
                                                                                                                                                                                                    628
                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                          448
                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                بر
••
```

```
: NAME/KEY: gene
: LOCATION: (1)...(1747)
: LOCATION: full length cDNA sequence fragment of Human AMPK
: OTHER INFORMATION: fragment begins at nucleotide 24 and ends with
: OTHER INFORMATION: nuclotide 1765
US-08-557-006C-39
                                   Ş
                                                                        밁
                                                                                                 δÃ
                                                                                                                                              밁
                                                                                                                                                                            δÃ
                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Sim.
Matches 418;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
   765
                                                                                                            749
                                                                                                                                               645
                                                                                                                                                                                 689
                                                                                                                                                                                                                     585
                                                                                                                                                                                                                                                        629
                                                                                                                                                                                                                                                                                            525
                                                                                                                                                                                                                                                                                                                                                                 465
                                                                                                                                                                                                                                                                                                                                                                                                    509
                                                                                                                                                                                                                                                                                                                                                                                                                                        405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
CCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT
                                   CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT
                                                                                                                                            CGTTCGACGATGAGCACGTGCCTACGCTCTTTAAGAAGATCCGAGGGGGTGTGTTCTACA
                                                                                                                                                                                                                                      GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGC
                                                                                                                                                                                                                                                                                                             GCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTCCATCTGCCACAGAGAGACCTAAAGCCCGGAGAACCTGCTTTTGGATGAGAAAAACAACA
                                                                       TCCCGGAGTATCTCAACCGTTCTATTGCCACTCTGCTGATGCACATGCTGCAGGTGGACC
                                                                                                          TGCCCCACTTCATTCCTCCAGATTGCCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                             CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 748
                                                                                                                                                                                                                   CTGAGGTTGATATCTGGAGCTGTGGGTGTTATCCTGTATGCCCTTCTCTGTGGCACCCTCC
                                                                                                                                                                                                                                                                                        GCTGTGGATCGCCAAATTATGCAGCACCGGAGGTCATCTCAGGAAGGCTGTATGCGGGTC
                                                                                                                                                                                                                                                                                                                                                               CTAAGATAGCTGACTTCGGACTCTCTAATATGATGTCAGATGGTGAATTTCTACGAACTA
                                                                                                                                                                                                                                                                                                                                                                                                   TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGTGGAAGCTCGCCGGCTCTTCCAGCAGATTCTGTCTGCCGTGGACTACTGTCACAGGC 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAATATGTGTCTGGAGGTGAATTGTTCGACTACATCTGTAAACACGGGAGGGTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGAGCACGTCTCGGGGGGGGGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGGAGT----CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGGACACTACGTGCTGGGGGACACCCTGGGCGTCGGCACCTTCGGCAAAGTGAAGATTG 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATGGTTGTCCACAGGGACCTGAAGCCAGAGAACGTGTTGCTGGACGCCCAGATGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCCTCATATTATCAAACTCTACCAAGTGATCAGCACTCCAACAGACTTTTTTATGGTAA 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGTTTAGATGTTGGAAAAATAAAACGAGAAATTCAAAATCTTAAACTCTTTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGAACATCAATTGACAGGCCATAAAGTGGCAGTTAAGATCTTAAATAGACAGAAGATTC 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 198.6; DB 4;
Pred. No. 1.9e-36;
O; Mismatches 344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            344; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
 809
                                     853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
```

RESULT 7
US-08-57-006C-24
; Sequence 24, Application US/08557006C
; Patent No. 6258547
; GENERAL INFORMATION:

```
맑
                                    Š
                                                                           밁
                                                                                                          δÃ
                                                                                                                                                   밁
                                                                                                                                                                                    Š
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: Description of Artificial Sequence: Rat liver AMP
; OTHER INFORMATION: protein kinase
US-08-557-006C-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
US-08-557-006C-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: |
SEQ ID NO 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 37, Application US/08557006C Patent No. 6258547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: PCT/GB94/010 PRIOR FILING DATE: 1994-05-20 PRIOR APPLICATION NUMBER: GB 9310489.1 PRIOR FILING DATE: 1993-05-21 PRIOR APPLICATION NUMBER: GB 9318010.7 PRIOR APPLICATION NUMBER: GB 9318010.7 PRIOR FILING DATE: 1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
APPLICANT: Forder, Robert A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NCAP/PH/3/7588/UST
CURRENT APPLICATION NUMBER: US/08/557,006C
CURRENT FILING DATE: 1996-03-06
CURRENT FILING DATE: 1996-03-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 1736
TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
458 CCAAGATAGCCGATTTCGGATTATCTAATATGATGTCAGATGGTGAATTTCTGAGAACTA
                                                                                                                449
                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                               278
                                                                                                                                                                                                                                                                                                       218
                                                                                                                                                                                                                                                                                                                                            269
                                                                                                                                                                                                                                                                                                                                                                               158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    809 CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                       96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 7.8%;
Local Similarity 53.3%;
les 408; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 448
                                                                                                                                                                                                                                                                                                                                                                             GCAGTTTAGATGTTGGGAAAATAAAACGAGAAATTCAAAATCTAAAACTCTTTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAGCACGTCTCGGGGGGTGAGCTATTCGACCTGCTAAAGAAGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                                                                        ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                CGGAGT----CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAACATCAATTAACAGGCCATAAAGTGGCAGTTAAAATCTTAAATAGACAGAAGATTC
                                      TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 568
                                                                         ATCCTCATATTATCAAACTATACCAGGTGATCAGCACTCCAACAGATTTTTTATGGTAA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT 825
                                                                                                            ACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA 508
                                                                                                                                                                                                                         TGGAATATGTGTCTGGAGGTGAATTATTTGACTACATCTGTAAGCATGGACGGGTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Beri, Rajindar K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT/GB94/01093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 182.6; DB 4;
Pred. No. 7.7e-33;
0; Mismatches 354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1736;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω,-
                                                                                                                                                                                                                                                                                                                                                                                                                  268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151
                                                                                                                                                                                                                                                                                                                                                                             217
```

```
밁
                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                밁
                                                                                                    Q
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-557-006C-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         us-08-557-006C-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Beri, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 36, Application US/08557006C Patent No. 6258547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 408;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/08/557,006C CURRENT FILING DATE: 1996-03-06 PRIOR APPLICATION NUMBER: PCT/GB94/01093 PRIOR FILING DATE: 1994-05-20 PRIOR APPLICATION NUMBER: GB 9310489.1 PRIOR FILING DATE: 1993-05-21 PRIOR FILING DATE: 1993-05-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER:
PRIOR FILING DATE: 1993-0
NUMBER OF SEQ ID NOS: 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NGAP/PHM37588/UST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 1783
TYPE: DNA
ORGANISM: Human AMP protein kinase
                         389
                                                                                                                                               219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 569
                                                                                                                                                                                                                           159 GCAGTTTAGATGTTGTTGGAAAAATAAAACGAGAAATTCAAAATCTAAAACTCTTTCGTC
                                                                                                                                                                                                                                                                                                                                  152 GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                     Y Match 7.88;
Local Similarity 53.38;
                                                                                                                                                                                                                                                                                                                                                                                              39 TCGGACACTACGTGCTGGGCGACACGCTGGGCGTCGGCACCTTCGGCAAAGTGAAGATTG
CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATTTGATGATGAGCATGTACCTACGTTATTTAAGAAGATCCGAGGGGGGTGTCTTTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGTGATGGCC
                                                           TGGAATATGTCTCTGGAGGTGAATTATTTGACTACATCTGTAAGCATGGACGGGTTGAAG
                                                                                         TGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC
                                                                                                                                               ATCCTCATATTATCAAACTATACCAGGTGATCAGCACTCCAACAGATTTTTTATGGTAA 278
                                                                                                                                                                                   ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 328
                                                                                                                                                                                                                                                                    CGGAGT----CGGTGCTGATGAAGGTGGAGCCGGGAGATCGCCATCCTGAAGCTCATCGAAC
                                                                                                                                                                                                                                                                                                             GAGAACATCAATTAACAGGCCATAAAGTGGCAGTTAAAATCTTAAATAGACAGAAGATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACTGAAACGAGCAACTATCAAAGACATAAGAGAGCATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCCAGAATATCTCAATCGTTCTGTCGCCACTCTCCTGATGCATATGCTGCAGGTTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAAGTTGATATCTGGAGCTGTGGTGTTATCTTGTATGCTCTTCTTTGTGGCACCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTGCGGATCTCCAAATTATGCAGCACCTGAAGTCATCTCAGGCAGATTGTATGCAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Beri, Rajindar K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GB 9318010.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches 354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 182.6; DB 4
Pred. No. 7.8e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                    268
                                                                                                                                                                                                                                                                                                             158
                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      577
                                                                                                                                                                                                                              218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              628
```

1;

; NAME/KEY: ; LOCATION: US-08-677-298-1

CDS 376..2565

```
758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        무
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                 γ
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                               US-08-557-006C-44
                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                  RESULT 11
                                               Sequence 44, Application US/08557006C Patent No. 6258547 GENERAL INFORMATION:
 APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 7.6%;
Best Local Similarity 51.7%;
Matches 404; Conservative
                                                                                                                                                                  1313
                                                                                                                                                                                                                                   1253
                                                                                                                                                                                                                                                                                                  1193
                                                                                                                                                                                                                                                                                                                                                                 1133
                                                                                                                                                                                                                                                                                                                                                                                                                                 1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1013
                                                                                                                                                                                                  872
                                                                                                                                                                                                                                                                                                                               752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          653 ATCCAACAAGTCTACAAAAGCTCTTCAGAGAAGTAAGAATAATGAAGATTTTAAATCATC 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           593 CAAGACATATCCTTACAGGCAGAGAGGTTGCAATAAAAATAATTGACAAAACTCAGTTGA 652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              533 TCGGAAACTACAGACTGTTGAAAACAATCGGCAAGGGGAATTTTTGCAAAAGTAAAATTGG 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272 CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A 872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCCTGAACCCGGGAGAAGCTGT 211
                                                                                                                                                                  A 1313
                                                                                                                                                                                                                                                             AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACG
                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTGGATGTGGAGTCTGGGGGGTCATTTTATACACACTAGTCAGTGGCTCACTTCCCT 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATAGCAGATTTCGGTTTTAGCAATGAATTTACTGTTGGCGGTAAACTCGACACGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAATATAGTGAAGTTATTCGAAGTCATTGAAACTGAAAAAAACACTCTACCTAATCATGG
                                                                                                                                                                                                                              TTAAACGCGGCACTCTAGAGCAAATCATGAAGGACAGGTGGATCAATGCAGGGCATGAAG
                                                                                                                                                                                                                                                                                               CCTTCTACATGTCTACAGACTGTGAAAACCTTCTCAAACGTTTCCTGGTGCTAAATCCAA 1257
                                                                                                                                                                                                                                                                                                                               CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGCCCG
                                                                                                                                                                                                                                                                                                                                                              TTGATGGGCAAAACCTAAAGGAACTGAGAGAGAGAGTATTAAGAGGGAAATACAGAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGGTGGGGGGGCTCTGCCCT 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGCAGTCCTCCATACGCAGCACCTGAGCTCTTCCAGGGCAAGAAATATGACGGGCCAG 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGATCGTACATCGAGACCTCAAGGCTGAAAATCTATTGTTAGATGCCGATATGAACATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACC 271
                                                                                                                                                                                                                                                                                                                                                                                               TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATATGCAAGTGGAGGTGAAGTATTTGACTATTTGGTTGCACATGGCAGGATGAAGGAAA 832
Beri, Rajindar I
Carling, David
Forder, Robert
                                  7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 177.8; DB 2;
Pred. No. 1.1e-31;
0; Mismatches 377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2698;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                 1312
                                                                                                                                                                                                                                                                871
                                                                                                                                                                                                                                                                                                                                                                1192
                                                                                                                                                                                                                                                                                                                                                                                               751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
RESULT 10 .
US-08-677-298-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08677298 Patent No. 5863729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                TELEFAX: (303) 499-8089 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0
ANTI-SENSE:
                HYPOTHETICAL:
                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Caruthers, Jennie
REGISTRATION NUMBER: 34,
                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                          MOLECULE TYPE:
                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             759
                                              STRANDEDNESS:
TOPOLOGY: not
                                                                                                                                                                                                      REGISTRATION NUMBER: 34,464
REFERENCE/DOCKET NUMBER: 9-96
                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/677,298 FILING DATE: 09-JUL-1996 CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 5370 | CITY: Boulder
                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 80303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAAGTTGATATCTGGAGCTGTGGTGTTATCTTGTATGCTCTTTTTTGTGGCACCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACTGANACGAGCAACTATCANAGACATAAGAGAGCATGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCCAGAATATCTCAATCGTTCTGTCGCCACTCTCCTGATGCATATGCTGCAGGTTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATTTGATGATGAGCATGTACCTACGTTATTTAAGAAGATCCGAGGGGGGTGTCTTTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAAGATAGCCGATTTCGGATTATCTAATATGATGTCAGATGGTGAATTTCTGAGAACTA 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCA 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATGGAAGCCAGGCGGCTCTTTCAGCAGATTCTGTCTGCTGTGGATTACTGTCATAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATATGGTTGTTCATCGAGACCTGAAACCAGAGAATGTCCTGTTGGATGCACACATGAATG
                                                                                nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ဗ
                                                                                              2698 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Greenlee, Winner and Sullivan, 5370 Manhattan Circle, Suite 201
                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Piwnica-Worms, Helen
VENTION: DNA SEQUENCES ENCODING
                                              iss: double
not relevant
                                                                                                                                                                    (303) 499-8080
                NO
                                cDNA to mRNA
                                                                                                                                                                                                                                    Jennie M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KINASE
                                                                                                                                                                                                                                                                                                                                          #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMAN TCAK-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              398
```

```
; NAME/KEY: gene; 10...(1747); LOCATION: (1)...(1747); OTHER INFORMATION: Full length cDNA sequence fragment of Human AMPK -; OTHER INFORMATION: fragment begins at nucleotide 24 and ends with; OTHER INFORMATION: nucleotide 1765
US-08-557-006C-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                              S
                                                                                                                                                         Š
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
õ
                                           밁
                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURKANA.

CURRENT FILING DAIL.

PRIOR APPLICATION NUMBER: PC1/VL1

PRIOR FILING DATE: 1994-05-20

PRIOR APPLICATION NUMBER: GB 9310489.1

PRIOR PILING DATE: 1993-05-21

TO PILING DATE: GB 9318010.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR FILING DATE: 19
NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/08/557,006C CURRENT FILING DATE: 1996-03-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH: 1747
                                                                                                                                                                                                     518
                                                                                                                                                                                                                                                                                  458
                                                                                                                                                                                                                                                                                                                                                                                                                                             338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212
                                                                                                                                                             627
                                                                                                                                                                                                                                          567
                                                                                                                                                                                                                                                                                                                         507
                                                                                                                                                                                                                                                                                                                                                                 398
                                                                                                                                                                                                                                                                                                                                                                                                      447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        152
  744 CCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGG
                                                                                                                                                                                                                                                                                TGCTAAGATAGCTGACTTCGGACTCTCTAATATGATGTCAGATGGTGAATTTCTACGAAC
                                                                                                                                                                                                                                                                                                                                                               GCACATGGTTGTCCACAGGGACCTGAAGCCAGAGAACGTGTTGCTGGACGCCCAGATGAA
                                                                                                                                                                                                                                                                                                                                                                                   CTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAA 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGAGT---CGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAACATCAATTGACAGGCCATAAAGTGGCAGTTAAGATCTTAAATAGACAGAAGATTC 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGGACACTACGTGCTGGGGGACACCCTGGGCGTCGGCACCTTCGGCAAAGTGAAGATTG 97
                                           CCCGTTCGACGACGATGAGCACGTGCCTACGCTCTTTAAGAAGATCCGAGGGGGTGTGTT
                                                                            GCCCTTTGATGAC---GACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTT 743
                                                                                                                      TCCTGAGGTTGATATCTGGAGCTGTGGTGTTATCCTGTATGCCCTTCTGTGGCACCCT
                                                                                                                                                           CCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCT 686
                                                                                                                                                                                                   TAGCTGTGGATCGCCAAATTATGCAGCACCGGAGGTCATCTCAGGAAGGCTGTATGCGGG
                                                                                                                                                                                                                                                                                                                     CATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGTGGAAGCTCGCCGGCTCTTCCAGCAGATTCTGTCTGCCGTGGACTACTGTCTCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCCTGGACTTCTG--CCACAG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAATATGTGTCTGGAGGTGAATTGTTCGACTACATCTGTAAACACGGGAGGGTTGAAG 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCCTCATATTATCAAACTCTACCAAGTGATCAGCACTCCAACAGACTTTTTTATGGTAA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGTTTAGATGTTGGGAAAAATAAAACGAGAAATTCAAAATCTTAAACTCTTTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ON: NUCLEIC ACID ENCODING NGAP/PHM37588/UST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.5%;
54.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT/GB94/01093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 175.2; DB 4; Pred. No. 3.8e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AMP-ACTIVATED PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           343;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                       566
    803
                                                                                                                      637
                                                                                                                                                                                                   577
                                                                                                                                                                                                                                                                                517
                                                                                                                                                                                                                                                                                                                                                               457
                                                                                                                                                                                                                                                                                                                                                                                                                                           397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    217
                                           697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
••
```

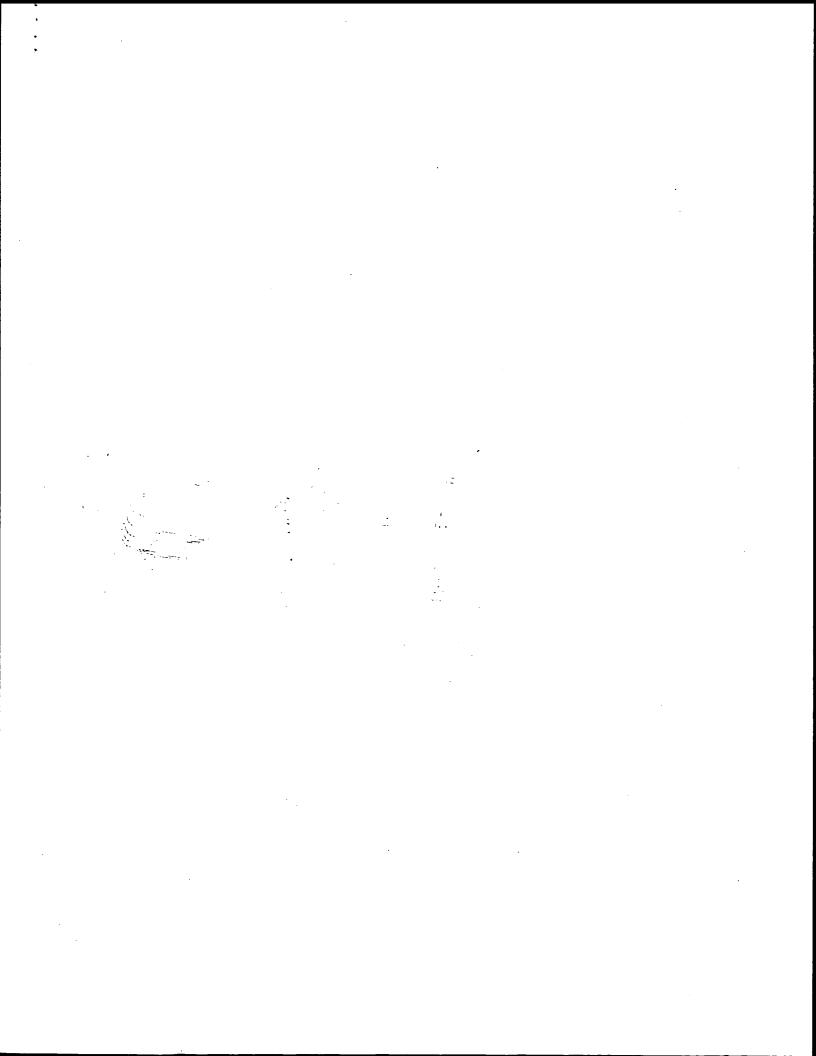
```
RESULT 13
US-09-159-385-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; NAME/KEY: CDS
; LOCATION: (1)
US-09-930-181-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
US-09-930-181-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
; NAME/KEY: CDS
; LOCATION: (94)..(1455)
US-09-159-385-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 5
LENGTH: 213
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                         SEQ ID NO 3
LENGTH: 2132
                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: AKIRA, SHIZUO
APPLICANT: KAWAI, TARO
                                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/09159385 Patent No. 5958748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 6.2%;
Best Local Similarity 86.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 5, Application US/09930181 Patent No. 6455292
                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/159,385
CURRENT FILING DATE: 1998-09-23
EARLIER APPLICATION NUMBER: JP97/261589
EARLIER FILING DATE: 1997-09-26
NUMBER OF SEQ ID NOS: 8
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/930,181
CURRENT FILING DATE: 2001-08-16
NUMBER OF SEQ ID NOS: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Full-Length Serine Protein Kinase FILE REFERENCE: 16U 101 V1
                                                   TYPE: DNA
ORGANISM: Homo :
FEATURE:
                                                                                                                                                                                                                                                          TITLE OF INVENTION: DNA CODING FOR SERINE/THREONINE KINASE FILE REFERENCE: PH-569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: OriGene Technologies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134 CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74 CCCAGCCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGGATCC 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCAGCACGCGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCCAAGGGGCCAGA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGACCCCTTGAAGCGAGCAACTATCAAAGACATACGAGAGCATGAATGGT 807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1)...(213)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                        sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 145; DB 4;
Pred. No. 1.7e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148
```

```
RESULT 14
US-09-186-277-3
                 SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 3
LENGTH: 2132
TYPE: DNA
                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/09186277 Patent No. 6171841
                                                                                                APPLICANT: AKIRA, SHIZUO
APPLICANT: KAWAI, TARO
TITLE OF INVENTION: DNA CODING FOR SERINE/THREONINE KINASE
FILE REFERENCE: 081356/0128
CURRENT APPLICATION NUMBER: US/09/186,277
CURRENT FILING DATE: 1998-11-05
EARLIER APPLICATION NUMBER: J997/261589
EARLIER FILING DATE: 1997-09-26
NUMBER OF SEQ ID NOS: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 360;
  ORGANISM: Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match 5.8%;
Local Similarity 54.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                              GACGCT 770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGGTCCCCCCATTATGCGTG 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGACGGACGTGGTCCTCATCCTGGAGCTGGTCTCTGGCGGGGAGCTCTTTGACTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCCATCCTGAAGCTCATCGAACACCCCACATGTCCTCAAGCTCCACGACGTCTACGAGAA 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCT 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCAGAGATTGTGAACTATGAGCCGCTG - - - GGCCTGGAGGCGACATGTGGAGCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTTTTGGATGAGAAAAAC------AACATCCGCATTGCAGACTTCGGCATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGCGTTCACTACCTGCACTCTAAGCGCATCGCACACTTTGACCTGAAGCCGGAAAACAT 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCGGAGAAAGAGTCGCTGACGGAGGACGAGGCCACCCAGTTCCTCAAGCAGATCCTGGA 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTC 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCT 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACATCCTGCGGGAGATCCGGCACCCCAACATCATCACCCTGCACGACATCTTCGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGGGAGAAGCTGTC------GGAGTCGGTGCTGATGAAGGTGGAGCGGGAGAT 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATCGTGCGGAAGTGCCGGCAGAAGGGCACGGGCAAGGAGTACGCAGCCAAGTTCATCAA 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGGAGGACGTGGAGGACCATTATGAGATGGGGGAGGAGCTGGGCAGCGGCCAGTTTGC 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTCATCACCTATATCCTCCTGAGCGGTGCATCCCCGTTCCTGGGCGAGACCAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGG 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCACAAGATCGAGGCGGGGAACGAGTTCAAGAACATCTTCGGCACCCCGGAGTTTGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATGCTGCTGGACAAGAACGTGCCCAACCCACGAATCAAGCTCATCGACTTCGGCATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCT 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGCGCCGCCTGTCATCCAGCCGGCGTGGGGTGAGCCGGGAGGAGTCGAGCGGGAGGT 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 135.6; DB 2;
Pred. No. 4.7e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 279; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ψ
                                                                                                                                                                                                                                                                     US-09-159-385-4
                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY: CDS
; LOCATION: (94)..(1455)
US-09-186-277-3
                                                                                                                                                                                                                                                                                             RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         臣
                                                                                                                  GENERAL INFORMATION:
APPLICANT: AKIRA, SHIZUO
APPLICANT: KAWAI, TARO
TITLE OF INVENTION: DNA CODING FOR SERINE/THREONINE
FILE REFERENCE: PH-569
                                                                                                                                                                                                                             Sequence 4, Application US/09159385 Patent No. 5958748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 5.8%;
Best Local Similarity 54.1%;
Matches 360; Conservative
          CURRENT APPLICATION NUMBER: US/09/159,385
CURRENT FILING DATE: 1998-09-23
EARLIER APPLICATION NUMBER: JP97/261589
EARLIER FILING DATE: 1997-09-26
NUMBER OF SEQ ID NOS: 8
                                                                                                                                                                                                                                                                                                                                                          765
                                                                                                                                                                                                                                                                                                                                                                                               714
                                                                                                                                                                                                                                                                                                                                                                                                                                         705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78
                                                                                                                                                                                                                                                                                                                                                                                               GCTGCT 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCT 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCCATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAA 305
                                                                                                                                                                                                                                                                                                                                                          GACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTCATCACCTATATCCTCCTGAGCGGTGCATCCCCGTTCCTGGGCGAGACCAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTCATCCTCTTCGCCCTGCTCGGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCA 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGCTGCTGGACAAGAACGTGCCCAACCCACGAATCAAGCTCATCGACTTCGGCATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTTTGGATGAGAAAAAC------AACATCCGCATTGCAGACTTCGGCATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGCGTTCACTACCTGCACTCTAAGCGCATCGCACACTTTGACCTGAAGCCGGAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAGACGGACGTGGTCCTCATCCTGGAGCTGGTCTCTGGGGGGGAGCTCTTTGACTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGCGCCCCTGTCATCCAGCCGGCGTGGGGTGAGCCGGGAGGAGTCGAGCGGGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCGTGCGGAAGTGCCGGCAGAAGGGCACGGGCAAGGAGTACGCAAGCCAAGTTCATCAA 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGGAGGACGTGGAGGACCATTATGAGATGGGGGAGGAGCTGGGCAGCGGCCAGTTTGC 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCAGAGATTGTGAACTATGAGCCGCTG----GGCCTGGAGGCGGACATGTGGAGCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCACAAGATCGAGGCGGGAACGAGTTCAAGAACATCTTCGGCACCCCGGAGTTTGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCCGAGAACCT 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCGGAGAAAGAGTCGCTGACGGAGGACGAGGCCACCCAGTTCCTCAAGCAGATCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTC 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACATCCTGCGGGAGATCCGGCACCCCAACATCATCACCCTGCACGACATCTTCGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGGGAGAAGCTGTC------GGAGTCGGTGCTGATGAAGGTGGAGCGGGAGAT 245
                                                                                                                                                                                                                                                                                                                                                          770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 135.6; DB 4;
Pred. No. 4.7e-22;
0; Mismatches 279;
                                                                                                                                          KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              407
```

밁 Ωy 밁 δÃ 밁 Š 밁 õ 밁 Q 멼 Ş 밁 Š 밁 Š 밁 Ş 밁 δÃ 밁 Ş

ω

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
Search completed: April 22, 2003, 00:26:08 Job time: 66.0237 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (10)..(1353)
US-09-159-385-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 5.6%; Score 130.6; DB 2; Length 1429; Best Local Similarity 56.5%; Pred. No. 5.8e-21; Matches 291; Conservative 0; Mismatches 209; Indels 15; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 4
LENGTH: 1429
TYPE: DNA
ORGANISM: Mus musculus
                                                                                                                                                                                            301 GGTGGCGAGCTTTTCGACTTCCTGGCCGAGAAGGAGTCATTGACGGAGGATGAGGCCACG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                571 TGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGC 630
                                                                                                                                                                                                                                                                                                                                                                                                                           514 ---ATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGC 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361 CAGTTCCTCAAACAATCCTAGACGGTGTCCACTACCTGCACTCCAAGCGCATCGCACAC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             403 AAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACCAGCTACTCCCATCTGCCAC 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            343 GGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCCGA 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 CGGGAGGATCGAACGCGAGGTGAGCATCCTGCGCGAGATCCGCCAACATCATA 240
                                                                                          658 TTCCTGGGCGAGACCAAGCAGGAGACGCTGACGAA 692
                                                                                                                                              691 TTTGATGACGACAACCTCCGCCAGCTGCTGGAGAA 725
                                                                                                                                                                                                                                                                                                                                                                                                 481 AAGCTCATCGACTTTGGCATCGCGCACAGGATCGAGGCTGGCAGCGAGTTCAAGAACATC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      223 CTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCCACATGTCCTC 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGC------ 513
                                                                                                                                                                                                                                                                                                 TTTGGCACACCCGAGTTTGTCGCCCCCGAGATCGTGAACTATGAGCCA---CTTGGCTTG 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
```



BQ178547 UI-M-EV0-BQ573641 UI-M-FD0-AL538014 AL538014

```
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTITY_NUC Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           April 21, 2003, 20:07:11; Search time 2126.25 Seconds (without alignments) 17777.901 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-003-690-3
2334
     16154066 segs, 8097743376 residues
                                                                                                                                                                                                                                                                                                                                    EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atgtcgtccggggccaagga.....ccaacgggacccctctgccc 2334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                       em_estpl:*
em_htc:*
gb_est1:*
gb_est2:*
gb_htc:*
gb_est3:*
gb_est4:*
                                                                                                                                                                                                                                                                     em_estmu:*
em_estov:*
                                                                       em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
em_gss_vrt:*
                                                                                                                                                                                                                                                                                               em_esthum: *
em_estin: *
                                                                                                                                                                                                                                                                                                                       em_estba:*
em_gss_pro:*
em_gss_rod:*
                                      em_gss_mam:*
em_gss_mus:*
                                                                                                                        em_estom:*
gb_gss:*
                                                                                                                                                             gb_est5:*
                          em_gss_other:*
                                                              em_gss_fun:*
                                                                                                                                                  em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                             32308132
```

o o

o 0

540.4 522.4 40.8 40.0

> 20.4 19.7 19.0 18.9 18.8 18.4 18.3 17.4 17.4

BQ443644 W41136

BF529630 602043855
BQ086295 1J20h01.y
BF52917 602042051
BQ0444032 UI-M-EW0-BF796285 60225850
BM944236 UI-M-E10-BF866432 III-S-E7011
BI669059 603295163
BF364892 QVO-NN114
BQ178699 UI-M-EV0-BM950539 UI-M-EV0-BM950539 UI-M-EW0-BM95053 UI-M-EW0-W41136 T602677384
W60403 2d29h06.r1
BG71357 602677384
W60403 2d29h06.r1
AN135353 GH13047.5
BE222941 hu44907.x
M18584 mb88611.r1
AW122891 UI-M-EW0-BQ445328 AGENCOURT
BM944588 UI-M-EG0-BG44538 AGENCOURT
BM944588 UI-M-EG0-BG45328 AGENCOURT
BM944588 UI-M-EG0-BG45328 AGENCOURT
BM944588 UI-M-EW0-BG931102 CM1-NT004

16.0 15.7 15.6 15.1

o o

394 1177 733 1882 546 563 334 740 293

BM12969 if21e10.y
W75642 me49a09 r1
BM466629 AGENCOURT
BG395625 602458251
BC017182 Homo sapi
BC017182 Homo sapi
BM944658 UI-M-EH09
BE251924 601107590
BF371253 RC6-FN013
BF222739 7932f02.x

ALIGNMENTS

•		. *			_																			
source	FEATURES			i					COMMENT	JOURNAL	TITLE	AUTHORS	REFERENCE			ORGANISM	SOURCE	KEYWORDS	VERSION	ACCESSION	DEFINITION	LOCUS	BQ434571	RESULT 1
1889	High quality sequence stop: 681. Location/Qualifiers	http://image.llnl.gov plate: LLAM13496 row: e column: 22	found through the I.M.A.G.E. Consortium/LLNL at:	DNA Sequencing by: Agencourt Bioscience Corporation Clone distribution: MGC clone distribution information can be	cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)	cDNA Library Preparation: Life Technologies, Inc.	Tissue Procurement: ATCC	Email: cgapbs-r@mail.nih.gov	Contact: Robert Strausberg, Ph.D.	Unpublished (1999)	National Institutes of Health, Mammalian Gene Collection (MGC)	NIH-MGC http://mgc.nci.nih.gov/.	1 (bases 1 to 889)	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Homo sapiens	human.	EST.	BQ434571.1 GI:21173647	BQ434571	Homo sapiens cDNA clone	BQ434571 889 bp mRNA linear EST 24-MAY-2002		

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

σ,	Uī	4	ω	2	_	Result No.
574.8	592.4	602.2	651.2	723.6	759.8	Score
24.6	25.4	25.8	27.9	31.0	32.6	Query Match Length DB
742	869	658	831	881	889	ength [
14	14	12	12	14	14	₩
BM944329	BM948524	BG819795	BF529743	BQ717903	BQ434571	Length DB ID
вм944329 UI-м-ЕНОр		BG819795 602781839			BQ434571 AGENCOURT	Description

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
BQ717903
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                     Ş
                                                                                                δÃ
                                                                                                                                               В
                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                       725
                                                               181
                                                                                                       665
                                                                                                                                               121
                                                                                                                                                                                                                                                                     545
                                                                                                                                                                                                                                                                                                                                                     485
                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                               _
                                                                                                                                                                                                                                                                                                                              TGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGG 544
                                                                                                                                                                                                                                                  TGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGA 604
                     AGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCC
                                                                                                     TCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGA 724
                                                                                                                                               TTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCT
                                                                                                                                                                                     TTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCT 664
                                                                                                                                                                                                                               TGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGA 120
                                                                                                                                                                                                                                                                                                               TGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGG
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James R. Lupski
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLAM13580 row: c column: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mammalia; Eutheria; Primates; Catarrhini,
1 (bases 1 to 881)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BQ717903 881 bp mRNA linear EST AGENCOURT_8241190 Lupski_sympathetic_trunk Homo sapiens IMAGE:6186946 5', mRNA sequence.
BQ717903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Robert Strausberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BQ717903.1 GI:21856800
                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    quality sequence stop: 620.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Technologies.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Directionally cloned using the following adaptors: 5'-TCGACCCACCGGTCGC-3' and 5'-GACTAGTTCTAGATCGGAGCGGCCGCCCT(15)-3'. Size selected: 1 kb for average insert length 1.9 kb. This is a primary Library, non-amplified. Library constructed by Life Technologies and donated by J. Lupski, M.D./Ph.D. (Baylo College of Medicine); available through Life
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Vector: pCMV-SPORT6 (Life Technologies); Site_1:
Not1; Site_2: Sall; cDNA made by oligo-dT priming.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Lupski_sympathetic_trunk"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_stage="adult, 16
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="sympathetic
/dev_stage="adult, 16 yr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="IMAGE:6186946"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 881
                                                                                                                                                                                                                                                                                                                                                                                                            31.0%;
95.3%;
                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                         Score 723.6; DB 14;
Pred. No. 1.9e-146;
0; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            271 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           trunk"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 others
                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 881;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                             180
                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Baylor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٧
                                                                                                                                                                                                                                                                                                                                                                                           ļ
```

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 788
                                             729
                                                                                   824
                                                                                                                            669
                                                                                                                                                                     764
                                                                                                                                                                                                             609
                                                                                                                                                                                                                                                      704
                                                                                                                                                                                                                                                                                               549
                                                                                                                                                                                                                                                                                                                                      644
                                                                                                                                                                                                                                                                                                                                                                            489
                                                                                                                                                                                                                                                                                                                                                                                                                     584
                                                                                                                                                                                                                                                                                                                                                                                                                                                              429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                 CTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAAGGCTCA 823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCGAA 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTG-CCTGGAGCCAGCCCC
                                                                                   GTCTGGAGCAAATTCAGAAACATCCTTGG---TACCTAGGCGGGAAACACGAGCCAGACC 880
                                                                                                                                                                                                                                   ACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCCACTTCATTC
                                                                                                                                                                                                                                                                                                                                                                            AGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACA 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCCACATGTCCTCA 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGC 223
                                             GTCTGGAGCAAATTCAGAAACATCCTTTGGTACNCTAGGGCGGGAAACACGAGCCAGACC
                                                                                                                            CTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAAGGCTCA
                                                                                                                                                                                                             ACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCCACTCCATTC
                                                                                                                                                                                                                                                                                               GGAGCTGTGGAGTCATCCTCTCGCCCTGCTCGTGGGGGGCTCTGCCCTTTGATGACGACA 608
                                                                                                                                                                                                                                                                                                                  GGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACA 703
                                                                                                                                                                                                                                                                                                                                                                                                                     ATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACATGT 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCC 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACT 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACA 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAGGAGGCCCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGG 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGG 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACCCCACATGTCCTCA 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tlssue_type="retinoblastoma"
/lab_host="DH10B (phage-resistant)"
/note="organ: eye; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: Sali; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 1.75 kb. Library constructed by Life Technologies."
246 c 274 g 160 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:6154749"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="NIH_MGC_67"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 759.8; DB 14; Pred. No. 2.7e-154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                             899
                                                                                                                                                                                                                                                                                                                                                                            548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              308
                                                                                                                                                                                                                                                                                                                                                                                                                                                              488
```

В Ş 밁 ρ 밁 Ş 밁 Š 밁 Ş 밁 δÃ 밁 Š 밁 δõ 밁 Ş 밁 Ş 밁 Š 밁 õ

789

CGTGCCCTGGAGCCAGCCCC

DЪ

Ş

2:

```
RESULT 3
BF529743
                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                      FEATURES
                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1204
                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAA 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTTGGCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAGGAGAACCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGATGGCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTCTGAGCATCCCGATGGCCCGGGGGGGGGGGTTCCCCCTGGNCCCCCCCGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAGGAGAACCAAGAAAAGATGATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCCTCAGTCTGGAGCAAATTCAGAAAC 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCC
                                                                                                                                          Email: cgapbs-r@mail.nih.gov
Tissue Procurement: David N. Louis, M.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; V
Mammalia; Eutheria; Primates; Catarrhini;
1 (bases 1 to 831)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                              http://image.llnl.gov
Plate: LLAM9495 row: c column: 01
                                                                                                                                                                                                                                                                                                                                                                             BF529743.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                        5', mRNA sequence.
BF529743
                                                                                                                                                                                                                                                                                                                                                                                                                                    BF529743 831 bp 602044002F1 NCI_CGAP_Brn67 Homo
                                                                                                                                                                                                                                              Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                          Unpublished (1999)
                                                                                                   quality sequence stop: 736
/clone="IMAGE:4181688"
/clone_lib="NCI_CGAP_Brn67"
/tlssue_type="anaplastic oligodendroglioma with lp/19g
                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           792
                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA
                                                                                                                                                                                                                                                                           Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                    clone
                                                                                                                                                                                                                                                                         Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 11-DEC-2000
IMAGE: 4181688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                            þe
```

```
ġ
                                                             RESULT 4
BG819795
                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                               밁
                                                                                                                                     Ş
                                                                                                                                                                밁
                                                                                                                                                                                     ð
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
             ACCESSION
                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                     1036 CAAGAAAAGATGATAT 1051
                                                                                                                                                                                                                                                                                                                                                                   463
                                                                                                                                                                                                                                                                                                                                                                                                                     403
                                                                                                                                                                                                                                                                                                                                                                                                                                            677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                702
                                                                                                                                                                                       976
                                                                                                                                                                                                                643
                                                                                                                                                                                                                                                                 583
                                                                                                                                                                                                                                                                                        857
                                                                                                                                                                                                                                                                                                                 523
                                                                                                                                                                                                                                                                                                                                                                                           737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      223
                                                                                                                                                                                                                                         917
                                                                                                                                                                                                                                                                                                                                          797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGG 377
                                                                                                                                                                                                                                                               AATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCG 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAA 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGACTGACGCCCAA-GGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTTGGACT 436
                                                                                                                                                                                       CTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAAC 1035
                                                                                                                                                                                                                             TCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC
                                                                                                                                                                                                                                                                                                                                                                  GCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGA 796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTTGGATG 496
                                                                                                              ACAAAATGGTTTATAT
                                                                                                                                                                TGCGGAAGCCTGCCATCCAACGGAGAGCTGGA-CCCGACGTCCTAGAGAGCATGGCATCA
                                                                                                                                                                                                                                                                                                                 TCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC
658 bp
602781839F1 NCI_CGAP_Brn67 Homo
5', mRNA sequence.
BG819795
BG819795.1 GI:14167382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /lab_host="DH10B (T1 phage-resistant)"
//lab_host="DH10B (T1 phage-resistant)"
//note="Organ; brain; Vector: pCMV-SPORT6; Site_1: NotI;
//site_2: SalI; Cloned unidirectionally. Primer: Oligo dT
//site_2: SalI; Cloned unidirectionally. Primer: Oligo dT
//site_2: SalI; Ab. Constructed by Life
//sechnologies. Note: this is a NCI_CGAP Library."
//site_1: Note: This is a NCI_CGAP Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 651.2; DB 12; Pred. No. 9.4e-131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                      sapiens cDNA clone IMAGE:4932680
                                                mRNA
                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 831;
                                                 EST 22-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                701
                                                                                                                                                                                                                                                                                                                                                                                                                                           736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      222
                                                                                                                                                                761
                                                                                                                                                                                                                                                                                                                 582
                                                                                                                                                                                                                                                                                                                                          856
                                                                                                                                                                                                                                                                                                                                                                   522
                                                                                                                                                                                                                                                                                                                                                                                                                     462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ďΤ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4:
```

REFERENCE AUTHORS TITLE

(bases 1 to 658)

KEYWORDS

ORGANISM

Homo sapiens

numan

COMMENT

JOURNAL

```
859 GCCGCGAAACACGAGCCAGACCCCTGCCTGGAGCCAGCCCCTGGCCGCCCGGGTAGCCATG 918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGA 1398
                                                                                                                                                                                                                                      GATGCCGGGGGTGGTGGCCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                        CTGAGCCGTCACGGGAAGCGGCCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCCCGGAAGCGTGTGGATTCTCCCCATG 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC
                                                                                                                                                                                                                                                                                                                           CTGAGCCGTCACGGGAAGCGGCGACCAGAGCCGGAAGTCCATGGAAGTCCTGAGCATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGGAGCCAA 180
                                                                                                                                                                                                  GATGCCGGGGGTGGTGCCCCTGTACCCACCGGACGGGCCTTGGAGATGGCCCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAA 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCCGACGTCCTAGAGAGCATGGCATCACTG 978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: David N. Louis, M.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MCC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /lab_host="DH10B (T1 phage-resistant)"
/note="Organ: brain; Vector: pCMV-SPORT6; Site_1: NotI;
/site_2: Sall; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 2.3 sb. Constructed by Life
Technologies. Note: this is a NCI_CGAP Library."
a 194 c 223 g 96 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="IMAGE:4932680"
/clone_lib="NCI_CGAP_Brn67"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tissue_type="anaplastic oligodendroglioma with 1p/19q/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 602.2; DB 12
Pred. No. 3.7e-120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                     1338
                                                                                                                                                                                                                                                                1278
                                                                       480
                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                        1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
BM948524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                       Matches 632;
                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                599
332 AGCACGTCTCGGGGGGGGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGCCGGGGAGCAGACCCAGAACGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCGCCGGGGAGCAGCCCCCGCCCCCAG 1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCC--AGGGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCCAGGGGTGGG 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of lowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BM948524 698 bp mRNA linear EST 14-MAR-2
UI-M-EGOp-bve-1-10-0-UI.rl NIH_BMAP_EGOp Mus musculus cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIH-MGC http://mgc.nci.nlh.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BM948524.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BM948524
                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seq primer: pYX-5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMAGE: 5691033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BMAP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA Library preparation: Dr. M. Bento Soares, Univeristy CDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iou Clone Distribution: MGC clone distribution information of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This clone was contributed by the Brain Molecular Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 698)
                                                                                                                                                                                                                                165
                                                                       Conservative
                                                                                                                                                                                                               //lab_host="minuty of 16.3 dpc"
//lab_host="minuty of 16.3 dpc
                                                                                                                                                                                                                                þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:10090"
/clone="IMAGE:5691033"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="NIH_BMAP_EG0p"
/tissue_type="whole brain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'dev_stage="embryo 18.5 dpc"
                                                                                          25.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA sequence
                                                                Score 592.4;
Pred. No. 5e-1
0; Mismatches
                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             627
                                                                                                 5e-118
                                                                                                                           DB 14;
                                                                    66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gene
                                                                Indels
                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 14-MAR-2002
                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        can be
                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ot Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                0
```

BASE COUNT ORIGIN

145

þ

Query Match

Local Similarity

25.8%;

619;

Conservative

0,

FEATURES

http://image.llnl.gov Plate: LLAM10858 row: n column:

High quality sequence stop: 612.

Location/Qualifiers

. 658

/organism="Homo sapiens" /db\_xref="taxon:9606"

SSO

source

밁 ρ 밁 δÃ B Q

1339

1219

밁

181

1099

Š 밁 Š Вb QΥ В

1039

121

919

 $\vdash$ 

61

В 50

241

```
RESULT 6
BM944329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 512
                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTTGCTTTTTGGATGAGAAAAAACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT 451
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCGCGAGCGGCTGCACAGAGAACTGCGAAGCGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAATGGCGAGCTGGACCTTGACGTTCTGGAAAGCATGGCGTCTCTGGGCTTCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCCAGACCCGTGCCTGGAGCCAGCCCTGGCCGCGGGTAGCCATGCGGAGCCTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTTGCTCGTGGGGGGCTCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGGTCCCCCCATTACGCATGTCCAGAGGTGATCAAGGGGGAAAAGTATGATGGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCATCGCAGACTTTGGTATGGCGTCCCTGCAAGTGGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATCTGTCACAGAGACTTGAAGCCAGAGAACCTGCTGTTGGATGAGAAAAAACAACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAG 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTATCTGGGCGGGAAACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGGCCCGGAAGTTCTTCCGCCAGATCGTGTCAGCACTTGGACTTCTGCCATAGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
cDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa
cDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa
cDNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
Clone Distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                         1 (bases 1 to 742)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
                                                                                                                                                                                            Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                   942 bp mRNA li
UI-M-EHOp-bvq-d-01-0-UI.rl NIH_BMAP_EHOp Mus
IMAGE:5695440.5', mRNA sequence.
                                                                                                                             Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                        BM944329.1 GI:19427914
                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                   698
                                                                                                                                                             Gene
                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                     musculus
                                                                                                                                                             Collection
                                                                               Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                    EST 14-MAR-2002
                                                                                                                                                                                                                                                                                                                                     CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                           Mus.
```

```
õ
                                                            밁
                                                                                                                                           밁
                                                                                                                                                                               Qy
                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     482
                                                                                                                                           422
                                                                                                                                                                                                                                                                                                                                                                                                                        682
                                                                                                    920
                                                                                                                                                                                 860
                                                                                                                                                                                                                        362
                                                                                                                                                                                                                                                              802
                                                                                                                                                                                                                                                                                                     302
                                                                                                                                                                                                                                                                                                                                           742
                                                                                                                                                                                                                                                                                                                                                                                  242
                                                                                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           502 AACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 GAGACCAGCTGCGGGTCCCCCATTACGCATGTCCAGAGGTGATCAAGGGGGGAAAAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    562 GAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATAT 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 AACAACATCCGCATCGCAGACTTTGGTATGGCGTCCCTGCAAGTGGGGGGACAGCCTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                     GCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTGGGG
                                                                                                                                                                                                                    GTGGAGCCCGAGAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTTGGTATCNTGG
                                                          GTAGCCTGCCTTCCAATGGCGAGCTGGACCCTGACGTTCTGGAAAGCATGGCGTCTCTGG
                                                                                                 GGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGG
                                                                                                                                                              GCGGGAAACACGAGCCCAGACCCGTGCCTGGAGCCCATGCCCGCGGGTAGCCATGC
                                                                                                                                                                                                                                                                                                   TTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAA 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGGCCGCCGGCAGACATGTGGAGCTGTGGAGTCATCCTATTTGCCCTGCTTGTGGGG
                                                                                                                                         GCGGGAAACACGAACCAGACCCTTGCCTGGAGCCAGCCCCAGGCCGCAGAGTAGCCATGC
                                                                                                                                                                                                                                                            GTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTA--CCTAG
                                                                                                                                                                                                                                                                                                                                                                              GCACTGCCCTTCGATGACGACAACCTGCGCCAGCTACTGGAGAAGGTGAAACGTGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  primer: pYX-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="whole brain"
//dev_stage="embryo 18.5 dpc"
/lab_host="DH108 [71 phage resistant)"
/lab_host="DH108 [71 phage resistant)"
/note="Organ: brain; Vector: pYX-Asc; Site_1: EcoR I;
Site_2: Not I; The library was constructed according to
Bonaldo, Lennon and Soares, Genome Research, 6:791-806,
1996. Denatured mRNa was size fractionated on a 1% agarose
gel. First strand cDNA synthesis was primed with an
oligo-dT primer containing a Not I site. Double stranded
cDNA was size selected according to mRNA size fraction,
ligated with EcoR I adaptor, digested with Not I, and then
cloned directionally into pYX-Asc vector. The library tag
sequence located between the Not I site and the polyA tail
, is CAGCCACGAC. This library was created for the
University of Iowa Mouse Brain Molecular Anatomy Project
(BMAP): 'Gene Discovery in the Developing Mouse Nervous
System', supported by National Institute of Mental Health
(NIMH), Hemin Chii, Ph.D., program coordinator."

219 g 145 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          clone was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="NIH_BMAP_EHOp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="IMAGE:5695440"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Mus musculus"
/strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contributed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 574.8; DB 14
Pred. No. 3.4e-114;
0; Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      υ
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                    1039
                                                            541
                                                                                                                                       481
                                                                                                                                                                               919
                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                            859
                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                      741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
```

```
CAGGACCTGCCTCCCCGGAATGATGTTGACCC-CCCCCGGAAGCGTGTGGATTCTCCCAT 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAGATGATATATTATCTGC-TTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGA-CTGCCTCGGAATGATGTTGACCCACCTCCGTAGGCGTGTGGATTCCCCCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAGATGATCTATTTTGCTTTTTGGATCGGGAAGAGCGGTATCCTAGCTGTGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
CDNA Library preparation: Dr. M. Bento Soares, University of Iowa
CDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa
DNA Sequencing by: Dr. M. Bento Soares, University of Iowa
Clone Distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This clone was contributed by the Brain Molecular Anatomy Project
                                                                                            1996. Denatured mRNA was size fractionated on a 1% agarose gel. First strand cDNA synthesis was primed with an oligo-dT primer containing a Not I site. Double stranded cDNA was size selected according to mRNA size fraction, ligated with EcoR I adaptor, digested with Not I, and then cloned directionally into pYX-Asc vector. The library tag sequence located between the Not I site and the polyA tail, is GTGCGTGGAA. This library was created for the University of Iowa Mouse Brain Molecular Anatomy Project (BMAP): 'Gene Discovery in the Developing Mouse Nervous System', supported by National Instututes of Mental Health (NIMH), Hemin Chin, Ph.D., program coordinator."
                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="NIH_BMAP_EVO"
/tissue_type="whole brain"
/dev_stage="embryo 15.5 dpc"
/lab_host="DH10B (T1 phage resistant)"
/note="Organ: brain; Vector: pYX-Asc; Site_1: EcoR I;
Site_2: Not I; The library was constructed according to
Bonaldo, Lennon and Soares, Genome Research, 6:791-806,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gene Collection (MGC)
                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 30-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
BQ573641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                          COMMENT
                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1011 CGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCG 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGAGCCAGGCGCTGGAGATGAGGCTAGAGGCGGAGGCTCCCCAACTTCCAAAACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCACGGGTCTGTCCTCCAGCCCTCTAAGCAGCCCCAAGGAGTCCGGTCTTTTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCGACGGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCT 1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAGTCCATGGAAGTCCTGAGCATCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCA 1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCCCGGAAGCGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAAGAGCGGTATCCTAGCTGTGAAGACCAAGGACCTGCCTCCTCGGAATGATGTTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGACGTTCTGGAAAGCATGGCGTCTCTGGGCTGCTTCAGAGACCGCGAGCGGCTGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGGACCGCGAGAGGCTGCATCG 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCAGCCCCTGGCCGGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCCAGAGCCTCC-TGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGA 830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCTGCCTTCT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGGCTCCCCGACTTCCAAAACGCAGA 1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCACTGGTCTGTCCTCCAGCCCTCTGAGCAGCCCAAGGAGTCCGGTCTTTTCCTTCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGACGGGCCTTGGAGATGGCCCAGCACAGTCAGAGATCCCGCAGCGTCAGTGGAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAAGTCCATGGAAGTCCTCAGTATCACAGATGCTGGGAGTGGTGGCTCCCCAGTGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACCTCGTAAGCGTGTGGATTCCCCCCATGCTGAGCAGACACGGGAAACGGAGGCCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGGAGCGGTATCCCAGCTGTGAGGACC-AGGACCTGCCTCCCCGGAATGATGTTGACC 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAAATTCAGAAACATCCTTGGTATCTGGGCGGGAAACACGAACCAGACCCTTGCCTTGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCCAGAGCCTCCNTGAGAGGGATGATTGAAGTGGAGCCCGAGAAAAGGCTCAGTCTGGA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               604;
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
cDNA Library preparation: Dr. M. Bento Soares, University
cDNA Library Arrayed by: Dr. M. Bento Soares, University
DNA Sequencing by: Dr. M. Bento Soares, University of Iow
                                                                                                                                                                                                                                                                                                                                                                                                          BQ573641 658 bp mRNA UI-M-FDO-byh-f-15-0-UI.rl NIH_BMAP_FDO IMAGE:5718138 5', mRNA sequence.
                                                                                                                                                                    NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 658)
                                                                                                                       Contact: Robert Strausberg, Ph.D.
                                                                                                                                                Unpublished (1999)
                                                                                                                                                                                                                                                                                          Mus musculus
                                                                                                                                                                                                                                                                                                                     house mouse
                                                                                                                                                                                                                                                                                                                                                                    BQ573641.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         671
                                                                                                                                                                                                                                                                                                                                                                    GI:21476958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                        musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                 University of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 19-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                        of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ŋ
```

REFERENCE AUTHORS

(bases 1 to 671)

COMMENT

JOURNAL TITLE

NIH-MGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

FEATURES

Seq

primer:

Location/Qualifiers

. 671 pYX-5.

source

/db\_xref="taxon:10090" /clone="IMAGE:5701154" /organism="Mus musculus" /strain="C57BL/6"

ORIGIN BASE COUNT

160

Best Local Similarity

90 . 3%;

Score Pred.

543; No. 2.

DB 14; .6e-107;

Query Match

RESULT 7 BQ178547

DEFINITION ACCESSION

BQ178547 671 bp mRNA UI-M-EVO-bws-b-03-0-UI.rl NIH\_BMAP\_EVO IMAGE:5701154 5', mRNA sequence. BQ178547 BQ178547.1 GI:20354039 EST.

mRNA

Pocas

δÃ 망 δÃ 망 Ş 밁

1158

721

GCTGAGCANACACGGGAAACGG

GCTGAGCCGTCACGGGAAGCGG 1179

1099 662

1040

542

GCTGCTTCAGAGACCGCGAGCGGCTGCACAGAGAACTGCGAAGCGAGGGAAAAACCAAG

601

Matches

602

VERSION KEYWORDS

SOURCE

ORGANISM

house mouse.

```
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                       1215
                                                                                                                                                                                                                                                                                                                                                                                                                          1095
    481
                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              795 GATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTA 854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      735 GGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAAT 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 GATTGAAGTGGAGCCCGAGAAAAGG-TCAGTCTGGAGCAAATTCAGAAACATCCTTGGTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 GGGGGTCTTCCACATGCCTCACTTCATCCCTCCAGACTGCCAGAGCCTCCTGAGAGGGAT 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACCGATGCCGGGGGTGGTGGCCCCCTGTACCCCACCGGACGGCCTTGGAGATGGCCCA 1274
                                                                                                                                                                                                             CATGCTGAGCCGTCACGGGAAGCGGCGGAAGCGGAAGTCCATGGAAGTCCTGAGCAT 1214
                                                                                                                                                                                                                                                                                                                          AGACCAGGACCTGCCTCCGGAATGATGTTGACCCACCTCGTAAGCGTGTGGATTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGA 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATGCTTAGCCTGCCTTCCAATGGCGAGCTGGACCCTGACGTTCTGGAAAGCATGGCGTC
CACAGATGCTGGGAGTGGCTCCCCCAGTGCCTACCAGACGGGCCTTGGAGATGGCCCA
                                                                                                                                                                 CATGCTGAGCAGACACGGGAAACGGAGGCCCAGAGCGGAAGTCCATGGAAGTCCTCAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                      GGACCAGGACCTGCCTCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTGGGCTGCTTCAGAGACCGGCGAGCGGCTGCACAGAGAACTGCGAAGCGAGGAGGAAAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAA 1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seq primer: pYX-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Clone Distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BMAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This clone was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gel. First strand cDNA synthesis was primed with an oligo-dT primer containing a Not I site. Double stranded cDNA was size selected according to mRNA size fraction, ligated with EcoR I adaptor, digested with Not I, and then cloned directionally into pYX-Asc vector. The library tag sequence located between the Not I site and the polyA tail, is TGAGAGAGC. This library was created for the University of Iowa Mouse Brain Molecular Anatomy Project (BMAP): 'Gene Discovery in the Developing Mouse Nervous System', supported by National Instututes of Mental Health (NIMH), Hemin Chin, Ph.D., program coordinator."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="whole brain"
/dev_stage="embryo 12.5 dpc"
/lab_host="DH10B (T1 phage resistant)"
/note="Organ: brain; Vector: pYX-Asc; Site_1: EcoR I;
/note="Organ: brain; Vector: pYX-Asc; Site_1: EcoR I;
/note="Organ: brain; Vector: pXY-Asc; Site_1: EcoR I;
/note="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:10090"
/clone="IMAGE:5718158"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib-"NIH_BMAP_FD0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contributed by the Brain Molecular Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 540.4; DB 14; Pred. No. 9.4e-107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                      1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               974
                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ь́е
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
```

Š

В Ş

밁 Ş 밁 Ş

Qy

378

δÃ ₽ δÃ

밁

Ş 밁 Ş 밁 Ş В

밁

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
AL538014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                        밁
                                                                         Ş
                                                                                                                 밁
                                                                                                                                                      δÃ
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                          Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1275 GCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCT 1334
                                                                                                                                                          199
                                                                                                                                                                                                                                     139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
319. TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                   185
                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                        CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                   CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCAGCCCAAGGAGTCCGGTCTTTTCCTTCACCGGAGCCAGGCGCTGGAGATGAG
                                        CTCATTGAGCACCCCCACGTCCTAAAGCTGCACGACGTTTATGAAAAACAAAAAATATTTG
                                                                             CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG
                                                                                                                 CGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCCTGAAG
                                                                                                                                                                                               CTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCGTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAG 1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCACAGTCAGAGATCCCGCAGCGTCAGTGGAGCCTCCACTGGTCTGTCCTCCAGCCCTCT 600
                                                                                                                                                                                                                                                                                                                                                       630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Full-length cDNA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               prime, mRNA sequence.
AL538014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL538014 LTI_FL013_FBrn1 Homo sapiens cDNA clone CS0DF029YC21 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota;
Mammalia; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genoscope - Centre National de Sequencage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL538014.1 GI:12801507
                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    numalia; Eutheria; (bases 1 to 836)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191 91006 EVRY cedex - France
11: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note-*Organ: Fetal brain; Vector: pCMVSPORT 6; 1st strar cDNA was primed with a NotI-ollgo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not and cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was constructed by Life Technologies. Contact: Feng Liang Life Technologies, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Technologies. Contact: Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockvill, Maryland 20850, USA Fax: (1) 301 610 8371 Email: fliangelifetech.com URL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    http://fulllength.invitrogen.com"
230 c 268 g 152 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="LTI_FL013_FBrn1"
/dev_stage="pooled tissue from post conception fetuses (20
week, 24 week and 26 week)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="CS0DF029YC21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Metazoa;
                                                                                                                                                                                                                                                                                                                                                                     22.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                     Score 527.6; DB 9;
Pred. No. 5.9e-104;
4; Mismatches 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     836 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ഗ
                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                           Length 836;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                    others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center Drive Rockville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 13-FEB-2001
                                                                                                                                                                                                                                                                                                                                                     2:
                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1st strand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       658
                                                                                                                                                                                               184
                                        304
                                                                             318
                                                                                                                 244
                                                                                                                                                        258
                                                                                                                                                                                                                                                                                                                                                     'n
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                             RESULT 11
BQ086295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                REFERENCE
                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 562
 TITLE
                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                                                                                                 542
                                                                                                                                                                                                                                                                                                                                                                                                                                                 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGGGGCCCCAGGGTGGGGGCGCCGGGAAACAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGAGATGGCCCAGCACAGCCAGAGATCCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTGAGGAGGAGCAACAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGAGCATGGCATCACTGGGCTGCCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCCGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCCGACGTCCTA 960
                                                                                                                                                                                                                                                                                                                                                                                                              GCTGGAGATGAGGCTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGGAGATGGCCCAGCAGACAG - CAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCCGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGAGGAGGAGAACCAAGAAAAGATGATATTATCTGC-TTTGGATCGGAAGGAGCGG
                    Melton, D., Brown, J., Kenty, G., Permutt, A., Lee, C., Kaestner, K., Lemishka, I., Scearce, M., Brese, L., J., Gradwohl, G., Clifton, S., Hillier, L., Marra, M., Pape, D., Wylie, T., Martin, J., Blistain, A., Schmitt, A., Theising, B., Ritter, E., Ronko, I., Bennett, J., Cardenas, M., Glbbons, M., McCann, R., Cole, R., Tsagareishvili, R., Williams, T., Tarken, V., and Rowers V.
                                                                                                                                                                                                                                          BQ086295 510 bp mRNA linear EST 29-APR-2 1j20h01.y1 Melton Normalized Human Islet 4 N4-HIS 1 Homo sapitens CDNA clone IMAGE:6135408 5' similar to TR:060843 O60843 PUTATIVE SERINE/THREONINE PROTEIN KINASE;, mRNA sequence.
                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Ve
Mammalia; Eutheria; Primates; Catarrhini;
1 (bases 1 to 510)
Endocrine
                                                                                                                                                               Homo sapiens
                                                                                                                                                                                human.
                                                                                                                                                                                                                BQ086295.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
               Jackson, Y. and Bowers, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Organ: brain; Vector: pCMV-SPORT6; Site_1: Site_2: Sall; Cloned unidirectionally. Primer: Ol Average insert size 2.3 %b. Constructed by Life Technologies. Note: this is a NCI_CGAP Library." a 238 c 318 g 94 t
Pancreas
                                                                                                                                                                                                               GI:20045499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22.4%;
Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 522.4;
Pred. No. 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; DB 12;
3.2e-103;
                                                                                                                                                                                                                                                                                                                                                                                577
                                                                                                                                               Vertebrata;
                                                                                                                              Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         936;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Site_1: Not
imer: Oligo
                                                                                                                                               Euteleostomi;
                                                                                                                                                                                                                                                                                            EST 29-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NotI;
igo dT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
```

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
BF529630
                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGACGGCCG-GAAGSGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGGAGACCAGCTGTGGGTCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTGTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGTGGACGCCGCCCCCCCCCCCACGCTAGAGCACATTCAGAAACACATATKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGTTCCACATGCCGCACTTTATCCCGCCCSACTGCCAGARTCTGCTACGGGGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAA 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTC 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGGACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGGACTTC
                                                                                                                                                                                                              Email: cgapbs-r@mail.nih.gov
Tissue Procurement: David N. Louis, M.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                    Plate: LLAM9494 row: n column: 14
High quality sequence start: 8
High quality sequence stop: 568.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                 NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 936
602043855F1 NCI_CGAP_Brn67 HC
5', mRNA sequence.
BF529630
                                                                                                                                                                                                                                                                                                                                                                               Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 936)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF529630.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
/db_xref="taxon:9606"
/clone="IMAGE:4181581"
/clone_lib="NCI_CGAP_Brn67"
/tissue_type="anaplastic oilloss"
                                                                                                 /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:11616993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear EST 11-DEC-2000 cDNA clone IMAGE:4181581
                                                                                                                                                                                                                                                                                                                                                                                                                     Gene Collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        364
```

/lab\_host="DH10B

(T1 phage-resistant)"

oligodendroglioma

Ş 밁 δ 밁 δ 밁 Ş Дb ð В δ 밁 δÃ 밁 δÃ 밁

밁

```
Ş
                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
       밁
                                             Ş
                                                                                               밁
                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                  1932
                                                                                                                                                                                                                                                                                                                                                                                                                        1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1692 TCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCC 1751
                       2052 TGGTGGCATCTACTCCGTCACCTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCG 2111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Н
                                                                                                                                        GGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGG
                                                                                                                                                                                                                              CAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCA 1991
                                                                                                                                                                                                                                                                             CGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTT 240
                                                                                                                                                                                                                                                                                                CGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGTCGCTGTCACAGACCAGCTT 1931
                                                                                                                                                                                                                                                                                                                                                                 AGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCAGCATCAAAGCAGAGACAT 1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCG
                                                                                                                                                                                     CAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAA 1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Library was constructed by Dr. Douglas Melton DNA sequencing k Washington University Genome Sequencing Center This clone is available royalty-free through LLNL; please contact the IMAGE consortium (info@image.llnl.gov) for further information Seq primer: -40RP from Gibco High quality sequence stop: 445.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Ave, Cambridge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (2000)
Contact: Douglas Melton, Klaus H. Kaestner, & Hiroshi Inoue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: dmelton@biohp.harvard.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fax: 617-495-8557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   617-495-1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amplified once on solid support and plasmid DNA from Library was prepared. The library DNA was normalized by method #4 from Bonaldo, Lennon, and Soares 1996 Genome Research 6:791-806; 0.5 microgram single-stranded library plasmid DNA was mixed with 5 micrograms PCR product representing library inserts and hybridized to an Ecot of 20. Single-stranded (unhybridized) plasmids were isolated by hydroxyapatite chromatography and used to make this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Organ: Pancreas; Vector: pSPORT1; Site_1: Not 1; Site_2: Sal 1; Starting library constructed using SuperScript Plasmid Library kit (Life Technologies). cDNA made by oligo-dT priming. Size-selected by column fractionation; average insert size 1.08 kb. Library was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               library."
171 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /dev_stage="Adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="IMAGE:6135408"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tissue_type="Islets of Langerhans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /sex="Both"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="Melton Normalized Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 510;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               136 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.4e-100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Islet 4 N4-HIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
420
                                                                                                                                        2051
                                                                                                                                                                                     300
                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         by:
```

```
Ϋ́
                                                                                                                                                                         ğ
                                                                                        문
                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
BF529174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /ERSION
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                         149
                                                                                                                                                                                                                                                                                                           318
  269
                                           498
                                                                                      209
                                                                                                                                 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                89
GAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCT
                                                                                                                                                                                                                                                                                                      GTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGG 377
                                        GAAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCT
                                                                                   CTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGA
                                                                                                                            CTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGA 497
                                                                                                                                                                         GAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTTGGACTT
                                                                                                                                                                                                                  GAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTT 437
                                                                                                                                                                                                                                                             GTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGC 2171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTGGCAGACGAGAAGAACGGGGCCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTGGCAGACGAGAAGAACGGGGCCCAGAC 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF529174 898 bp mRNA linear EST 11-DEC-20602042051F1 NCI_CGAP_Brn67 Homo sapiens cDNA clone IMAGE:41798285', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-rémail.nih.gov
Tissue Procurement: David N. Louis, M.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC: Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plate: LLAM9490 row: e column: 13 High quality sequence stop: 587.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5', mRNA sequence.
BF529174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BF529174.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 898)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /lab_host="DH10B (T1 phage-resistant)"
/note="Organ: brain; Vector: pCMY-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 2.3 kb. Constructed by Life
Technologies. Note: this is a NCI_CGAP Library."
a 275 c 280 g 189 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone-"IMAGE:4179828"
/clone_lib-"NCI_CGAP_Brn67"
/tissue_type-"anaplastic oligodendroglioma with lp/19q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                      21.0%;
98.1%;
                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                        Score 490.8;
Pred. No. 5.8
                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           510
                                                                                                                                                                                                                                                                                                                                                                      .8e-96;
                                                                                                                                                                                                                                                                                                                                                                                          DB 12;
                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                            ,898
                                                                                                                                                                                                                                                                                                                                                 u
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 11-DEC-2000
                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                       208
```

617

```
CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST 29-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 388
                                                                                      COMMENT
                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                  RESULT 14
BF796285
                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΩV
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 541
                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                               550
                                                                                                                                                                                                                                                                                                                                                                                                                          814 AAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           274 CATGTCCTCAAGCTCCACGACGTCTACGAGAAACAAGAAATATTTGTACCTGGTTCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 91.4 hes 541; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CACGTGCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTATACTTGGTTCTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGACGAC-ACCTGCGCCAGCTGCTGGAGAAGGTGAAACGTGGGGTCTTCCACATGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                               AAAAGGCTCAGTCTGGAGC-AATTCAGAAACATCCTTGGTATCTGGGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGCAGACTTTGGTATGGCGTCCCTGCAAGTGGGGGACAGCCTCCTGGAGACCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAAACAACATCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACGTTTCTGGTGGTGAGCTGTTCGACTACCTGGTAAAAAAAGGGAGACTGACACCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGACATGTGGAGCTGTGGAGTCATCCTATTTGCCCTTGTTGTGGGGGCACTGCCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGTCCCCCATTACGCANGTCCAGAGGTGATCAAGGGGGAAAAGTATGATGGCCGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCTGTCACAGAGACTTGAAGCCAGAGAACCTGCTGTTGGATGAGAAAAACAACATCCGC
           Email: cgapbs-r@mail.nih.gov
Tissue.Procurement: Louis Staudt, M.D., Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution informat
                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 753)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                 BF796285
602258590F1 NIH_MGC_85 Homo sapiens
                                                                                                       Contact: Robert Strausberg, Ph.D.
                                                                                                                    Unpublished (1999)
                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                          BF796285.1
                                                                                                                                                                                                                                                                                        mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 145 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (NIMH), Hemin Chin, Ph.D., program coordinator."
1 156 c 173 g 125 t 1 others
                                                                                                                                                                                                                                                          GI:12101339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21.0%;
 I.M.A.G.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 490.2; DB Pred. No. 7e-96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
Consortium/LLNL
               distribution information
                                                                                                                                                                                                                                                                                                    mRNA line
s cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                 linear EST 12-Ju
one IMAGE:4341838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                            865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600;
                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N
               can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          250
               ě
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
```

```
TCGAAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCCAATTCTGAA 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCGAAGTGGAGCCCG-AAAAAAGGCTCAGTCTGGAGCAAATTCAGAA 842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nih.gov

Tissue Procurement: Dr. James Lin, Univeristy of Iowa

CDNA Library preparation: Dr. M. Bento Soares, University of Iowa

CDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa

CDNA Sequencing by: Dr. M. Bento Soares, University of Iowa

DNA Sequencing by: Dr. M. Bento Soares, University of Iowa

Clone Distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 600)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BQ444032 600 bp mRN7
UI-M-EW0-bx1-p-15-0-UI.rl NIH_BMAP_EW0
IMAGE:5708798 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              found through the I.M.A.G.E. Consortium/LLNL http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NIH-MGC http://mgc.nci.nih.gov/.
national institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This clone was contributed by the Brain Molecular Anatomy Project
                                                                                                                                                                   gel. First strand cDNA synthesis was primed with an oligo-dT primer containing a Not I site. Double stranded cDNA was size selected according to mRNA size fraction, ligated with EcoR I adaptor, digested with Not I, and then cloned directionally into pYX-Asc vector. The library tag sequence located between the Not I site and the polyA tail is GTCCGTGGAA. This library was created for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="whole brain"
/dev_stage="embryo 15.5 dpc"
/lab_host="DH10B (TI phage resistant)"
/note="Organ: brain; Vector: pYX-Asc; Site_1: EcoR I;
/note="Organ: brain; Vector: pYX-Asc; Site_1: EcoR I;
/note="Organ: brain; Vector: pXX-Asc; Site_1: EcoR I;
/note="
University of Iowa Mouse Brain Molecular Anatomy Project (BMAP): 'Gene Discovery in the Developing Mouse Nervous System', supported by National Instututes of Mental Heali
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE:5708798"
/clone_lib="NIH_BMAP_EW0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:21247144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tion/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
```

VERSION
KEYWORDS
SOURCE
ORGANISM

BQ444032.1 EST.

house mouse

REFERENCE AUTHORS

TITLE

JOURNAL

Unpublished (1999)

COMMENT

FEATURES

primer:

source

. 600 PYX-5 RESULT 13 BQ444032

DEFINITION ACCESSION

Š 밁 δõ В Qy В ρ 밁 Ş

> 449 738

678 389 618 329

밁

```
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                     BM944236
                                                                                                                                       RESULT 15
                                                     ACCESSION
                                                                                     DEFINITION
                                                                                                       Focus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    167
                                                                                                                                                                                           703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAAAGATGATATATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGA 1097
                                                                                                                                                                                        GA-GCGGGGGCTCCCCGA-TTCCAAAACGCAGACGCTGCCTTCTCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                CAGCCAGAGATCCCGTAGCGTCAGT-GGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAA 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                CGATGCCGGGGGTGGTGGCTCCCCTGTACCCCACCGGACGGGCCTTGGAGATGGCCCAGCA 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCCAT 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCAT 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGAGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCA 1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACT 977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGCGGGAAACACGAGCCCAGACCCGTGCCTGGAGCCCAGCCCTGGCCGCCGGGTAGCCAT 917
                                                                                                                                                                                                                          GAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCC 1447
                                                                                                                                                                                                                                                            GCAG-CCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCC-GGGGCTGGAGATGAGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGAGTCGTCACGGGAAGCGGCGA-CAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCCAGCCCCTGGCCGGCTAGCCAT 226
                                                                                                                                                                                                                                                                                             GCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTC 1396
                                                                                                                                                                                                                                                                                                                               CAGCCAGAGATCCCGTAGCGTCCGTGGGAGCCTCCCCGGGTCTGTCCTCCAG-CCTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                  CGATGCCGGGGGTGGTGGCTCCCCTGTACCCACACGACGGCCTTTGGAGATGGCCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      572;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  http://image.llnl.gov
Plate: LLAM9956 row: c column:
                                                  UI-M-EH0p-bvq-a-22-0-UI.rl NIH_BMAP_EH0p IMAGE:5695389 5', mRNA sequence. BM944236
                                   BM944236.1
                                                                                                       BM944236
 house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib="NIH_MGC_85"
/tissue_type="lymphoma, cell line"
/lab_host="DH10B (phage-resistant)"
/note="Organ: lymph, Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.867 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC_Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="IMAGE:4341838"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 487.8; DB 12; Pred. No. 2.5e-95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        262 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  column: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                     614 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123 t
                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                    Mus musculus cDNA clone
                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                     EST 14-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              286
```

```
COMMENT
                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                      밁
                                                                                                 δÃ
                                                                                                                                                        밁
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    440 GCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGA 499
                                                                                                                                                          180
                                                                                                                                                                                                              620
  740
                                                   240
                                                                                                       089
                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                   560
                                                                                                                                                                                                                                                                                                                                                                                                                          500
                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCATAGCTACTCCATCTGTCACAGAGACTTGAAG-CAGAGAACCTGCTGTTGGATGAGA 59
  TCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCG
                                                      GGGCACTGCCCTTCGATGACGACAACCTGCGCCAGCTACTGGAGAAGGTGAAACGTGGGG
                                                                                                 GGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCG
                                                                                                                                                        ATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTATTTGCCCTGCTTGTGG
                                                                                                                                                                                                           ATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTGG
                                                                                                                                                                                                                                                               TGGAGACCAGCTGCGGGTCCCCCCATTACGCATGTCCAGAGGTGATCAAGGGGGGAAAAGT
                                                                                                                                                                                                                                                                                                                   TGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAAT 619
                                                                                                                                                                                                                                                                                                                                                                      AAAACAACATCCGCATCGCAGACTTTGGTATGGCGTCCCTGCAAGTGGGGGGACAGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                          AAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCC 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                548;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James Lin, Univeristy of Iowa
CDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa
CDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa
DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
Clone Distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NIH-MGC http://mgc.nci.nih.gov/
National Institutes of Health,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: pYX-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 614)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="whole brain"
//dev_stage="embryo 18.5 dpc"
/lab_host="DH108 [71 phage resistant)"
/lab_host="DH108 [71 phage resistant)"
/lote="forgan: brain; vector: pyx-Asc; Site_1: EcoR I;
Site_2: Not I; The library was constructed according to
Bonaldo, Lennon and Soares, Genome Research, 6:791-806,
1996. Denatured mRNa was size fractionated on a 1% agarose
gel. First strand cDNA synthesis was primed with an
oligo-dT primer containing a Not I site. Double stranded
cDNA was size selected according to mRNA size fraction,
ligated with EcoR I adaptor, digested with Not I, and then
cloned directionally into pyx-Asc vector. The library tag
sequence located between the Not I site and the polyA tail
,is CAGCACAGAC. This library was created for the
University of Iowa Mouse Brain Molecular Anatomy Project
(BMAP): 'Gene Discovery in the Developing Mouse Nervous
System', supported by National Institute of Mental Health
(NIMH), Hemin Chin, Ph.D., program coordinator."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone was contributed by the Brain Molecular Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="NIH_BMAP_EHOP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:10090"
/clone="IMAGE:5695389"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /strain="C57BL/6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20.4%;
89.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strausberg, Ph.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 476.2; DB 1
Pred. No. 7.6e-93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                           679
                                                                                                                                                                                                                                                                  179
                                                                                                                                                                                                                                                                                                                                                                      119
                                                         299
                                                                                                                                                        239
```

```
δã
                                                                                                       망
                                                                                                                     δÃ
                                                                                                                                  ₽
                                                                                                                                            δÃ
Search completed: April 22, 2003, 00:23:49 
Job time : 2137.25 secs
                           В
                                      Ş
                                                    밁
                                                               δÃ
                                                                              В
                         1037 AAGAAAAGATGATAT 1051
|||||||||||
600 AAGAAAAGATGATCT 614
                                                  300 TCTTCCACATGCCTCACTTCATCCCTCCAGACTGCCAGAGCCTCCTGAGAGGGGATGATTG 359
```

GenCore version 5.1.4\_p5\_4578 Copyright (c) 1993 - 2003 Compugen Ltd.

```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM nucleic – nucleic search, using sw model
    Pred. No. score grea and is der
No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2185239 seqs, 1125999159 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 atgtcgtccggggccaagga.....ccaacgggacccctctgccc 2334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-003-690-3
2334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           April 21, 2003, 19:23:30;
                                                                                                                                                                         SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1983_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1990_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1990_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1992_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1992_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA1993_DAT:

**
SIDS2/gcgdata/geneseq/geneseqn-embl/NA2000_DAT:

**
SIDS2/gcgdata/gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Search time 320.629 Seconds (without alignments) 16393.314 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4370478
```

Human full-length	AAK94157	22	2024	8.6	201	45
Human cDNA clone r	AAK93561	22	859	8.6	201	44
Human cDNA 5'-end	AAK91635	22	859	8.6	201	43
Polynucleotide seq	AAS06718	22	2361	8.7	202.4	42
DNA encoding novel	ABK43708	23	1349	8.7	204	41
Human expressed po	AAI99637	22	1349	8.7	204	40
Mammalian AMPK alp	AAT85925	18	1647	8.9	206.6	39
· Human PKIN-7 cDNA.	AAD34304	24	4381		207	38
	AAF44652	22	4321		207	37
	AAC77495	21	3957	8.9	207	36
	ABL26615	23	2766		207	35
	ABL11604	23	4118		211.2	34
Ħ	ABL11605	ພ	2118	9.0	211.2	33
18	AAD33068	24	2222	9.1	212.4	32
н,	AAQ47789	14	1536		212.8	31
kinase E	AAH76213	22	4699		221.4	30
	AA166822	22	2968	9.5	221.4	29
	AAX82952	21	2632	9.5	221.4	28
Human keratinocyte	AAX82951	21	2533	9.5	221.4	27
Human protein kina	AA166823	22	2352	9.5	221.4	26
Drosophila melanog	ABL07437	23	4354	9.8	229	25
Human polynucleoti	AAK52466	22	2979	10.2	237.8	24
Drosophila melanog	ABL05573	23	2663	10.2	238.8	23
polynuc	AAK51482	22	2715	10.3	٠	22
PAR-1B	AAD30398	24	2222	10.3	240.6	21
	AAD30397	24	2112	10.3	•	20
encoding n	ABK43545	23	316	11.0	•	19
encoding nov	AAS27156	22	316	11.0	257.8	18
nervous sy	ABA13768	22	316	11.0	257.8	17
neuronal	ABA05738	24	3250	11.1	259.4	1,6
e neurona	ABA05737	24	3170	•	259.4	15
protein k	AAF44655	22	1594	11.2	٠	14
neuronal	ABA05740	24	3392	11.3	•	13
neurona	ABA05739	24	3312	11.3	٠	12
	AAD18831	22	3269	11.3	264.2	11
Human full-length	AAK94923	22	2954	11.3		10

o a

## ALIGNMENTS

																	,,
DR DR	YY PI Iq	PA	PR	PF	X P	ΥΥ	<b>X</b> 00	XX	Z	XX	ξ >	Y DE	×	×	×	Ħ	RESU
WPI; 2001-343950/36. P-PSDB; AAU03517.	Plowman GD, Whyte D, Manning G, Sudarsanam S, Martinez R; Flanagan P, Clary D;	(SUGE-) SUGEN INC.	24-NOV-1999; 99US-0167482.	22-NOV-2000; 2000WO-US32085.	31-MAY-2001.	WO200138503-A2.	Homo sapiens.	reproductive disorder; gene cherapy; ss.	neurodegenerative disorder; inflammatory disorder; infectious disease;	metabolic disorder; immune related disease; neurological disorder;	Himan, protoin Kinaso, DHK, GHK, Cancor, Cardiogagonlar Aicorgo.	Polynucleotide sequence encoding human protein kinase #17.	12-SEP-2001 (first entry)	AAS/00/1/;		AAS06717 standard; cDNA; 2385 BP.	RESULT 1

Result No.

Score

Match Query

Length

DB Ħ

Description

Polynucleotide seq Human kinase PKIN-Human protein kina

SUMMARIES

2385 2897 2025 2217 2647 906

AAS06717 AAD26464 ABA02995 ABA02994 AAD34315 ABA08296 ABA08296 ABA0824 ABK70216

Human protein kina Human PKIN-18 cDNA Human HPOPK-1 hom Human Ser/Thr kina Human lung cancer Drosophila melanog

961 955.8 658.8 614 512 470.8

```
Query Match
Best Local s
Matches 2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               prevention, diagnosis and treatment of diseases associated with inappropriate kinase expression. For example, they may be used to treat cancers (especially cancers of haematopoietic origin), cardiovascular disease (e.g. atherosclerosis), metabolic disorders (e.g. diabetes), immune related diseases (e.g. rheumatoid arthritis), neurological disorders (e.g. schizophrenia), neurodegenerative disorders (e.g. parkinson's disease), inflammatory disorders (e.g. asthma), infectious disease (e.g. HIV) and reproductive disorders (e.g. infertility). Additionally, polynucleotides encoding protein kinases may be used for gene therapy and as DNA probes in diagnostic assays. The protein kinase polypeptides may be used as antigens in the production of antibodies against the protein kinases and in assays to identify modulators of protein kinase expression and activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AASO6701-AASO6757 encode for novel human protein kinases #1-57. The novel protein kinases have been identified as members of the tyrosine or serine/threonine kinase (PTK and STK) families. The polynucleotides encoding protein kinases and the polypeptides may be used in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleic acids encoding human kinase polypeptides, useful for preventing diagnosing and/or treating e.g. cancer, immune, cardiovascular and neuronal-associated diseases, and microbial infections -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example
    679
                                           667
                                                                                                                          607
                                                                                    619
                                                                                                                                                                   559
                                                                                                                                                                                                            547
                                                                                                                                                                                                                                                                                            487
                                                                                                                                                                                                                                                     499
                                                                                                                                                                                                                                                                                                                                     439
                                                                                                                                                                                                                                                                                                                                                                              427
                                                                                                                                                                                                                                                                                                                                                                                                                       379
                                                                                                                                                                                                                                                                                                                                                                                                                                                              367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
mes 2256; Conserv
                                      TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                                                                                        AAAAACAACCATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                                                                        TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCATCGAACACCCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAATATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAA
                                                                                                                                                                                                                                                                                                                                     TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                                                                                                                              AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                  AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTGTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2385 BP; 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Figure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; 433pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96.7%; Score 2256;
100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; 768 C; 731 G; 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22; Length 2385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                   438
738
                                        726
                                                                                 678
                                                                                                                          666
                                                                                                                                                                 618
                                                                                                                                                                                                          606
                                                                                                                                                                                                                                                   558
                                                                                                                                                                                                                                                                                            546
                                                                                                                                                                                                                                                                                                                                     498
                                                                                                                                                                                                                                                                                                                                                                              486
                                                                                                                                                                                                                                                                                                                                                                                                                                                            426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

밁

δÃ 밁 Q 밁 δÃ 밁 δÃ 밁 Qy 밁 ρ 밁 Ş 밁 Ş 밁 Ş

Š

δõ

밁 Ş

1807

CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC

CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC

1806

1746 1698 1686

GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTTCCCCTCGCTTT

GGCTCCCCGCGCTCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCC

GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTT

Š 밁 Š

1687

밁

δÃ

문

1627 1579 1567 1519

δÃ

밁

Š

밁

1507 1459

GGCGCCGGGGAGCAGCCCCCGCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCCCA 1518

GGCTCCCCGCGCTCCTCGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCC

1626 1578 GGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCAGGGGTGGG

1506

8 밁 δÃ

밁

1447 1399

문	727	GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC 786	
, V	739	GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC 798	
); B	787	GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC 846	
Qy	799	GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA 858	
DЪ	847	GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTTGGTACCTA 906	
Qy	859	GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATG 918	
밁	907	GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATG 966	
Qy	919	CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTG 978	
Db	967	CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGAG	
Qy	979	GGCTGCTTCAGGGACCGCGAGAGCTGCATCGCGAGCTGCGCAGGAGGAGGAGGAGCAA 1038	
DЬ	1027	GGCTGCTTCAGGGACCGCGAGAGCTGCAGCGAGCTGAGGAGGAGGAGGAGCAA 1086	
Qγ	1039	GAAAAGATGATATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCCAGCTGTGAGGAC 1098	
망	1087	GAAAAGATGATATATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 1146	
·	1099	CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCCGGAAGCGTGTGGATTCTCCCATG 1158	
DЪ	1147	CAGGACCTGCCTCCCGGAATGATGTTGACCCCCCCCGGAAGCGTGTGGATTCTCCCCATG 1206	
Qy	1159	CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC 1218	
Db	1207	CTGAGCCGTCACGGGAAGCGGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC 1266	
Qy	1219	GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCGACGGGCCTTGGAGATGGCCCAGCAC 1278	
Дb	1267	GATGCCGGGGGTGGCTCCCCTGTACCCACCCGACGGCCTTGGAGATGGCCCAGCAC 1326	
δĀ	1279	AGCCAGAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCCAGCCCTCTAAGC 1338	
Db	1327	AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC 1386	
Qy	1339	AGCCCAAGGAGTCCGGTCTTTTCCCTTTTCACCGGAGCCGGGGCCTGGAGATGAGGCTCGA 1398	
Db	1387	AGCCCAAGGAGTCCGGTCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGA 1446	

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                       immune disorder; atherosclerosis; Crohn's disease; Hodgkin's disease; Acquired Immune Deficiency Syndrome; AIDS; Addison's disease; anaemia; allergy; asthma; adult respiratory distress syndrome; multiple sclerosis; autoimmune thyroiditis; bronchitis; diabetes mellitus; osteoarthritis; good pasture's syndrome; Graves' disease; pancreatitis; psoriasts; rheumatoid arthritis; ulcerative colitis; cirrhosis; Cushing's syndrome; hepatitis; hypothyroidism; cerebral palsy; cataract; angina pectoris; cardiovascular disease; hypertension; vasculitis; myocarditis; obesity; congestive heart failure; ischaemic heart disease; lung tumour; gout; fatty liver; Niemann-Pick's disease; gene therapy; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1879
                                                                                                                                                                                                                                                                                                                                                                                                                        Human kinase PKIN-17 cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD26464 standard; cDNA; 2897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1819 CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT 1878
                  14-JUN-2001; 2001WO-US19444
                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC 2334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGCGAGGCCCCCCCAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACGAGAACGGGGCCCAGACCCGGCCTGCTGCTGCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC 2382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGGCCGAGGCCCCCCCAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCTACTCCGTCACCTTCACTCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCC
                                                                                                                                                                                                                                                                                                                                                                                      kinase; PKIN-17; cancer; leukaemia; adenocarcinoma; osteoporosis;
                                                                                                         /rcag= a
/product=
                                                                                                                                              Location/Qualifiers
1..2385
                                                                                                                "Human PKIN-17 protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2046
```

```
밁
                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to human kinase PKIN proteins and their corresponding cDNAs. A composition containing PKIN agonist is useful for CC corresponding cDNAs. A composition containing PKIN agonist is useful for CC compositing a disease or condition associated with decreased expression of PKIN and a composition comprising PKIN antagonist is useful for treating CC disorders include cancer (leukaemia, adenocarcinoma, lymphoma, melanoma, CC myeloma, sarcoma, teratocarcinoma, Hodgkin's disease); limune disorder (Acquired Immune Deficiency Syndrome (AIDS), asthma, Addison's disease, CC atherosclerosis, anaemia, allergies, adult respiratory distress syndrome, CC autoimmune thyroiditis, gout, bronchitis, Crohn's disease, diabetes mellitus, multiple sclerosis, Good pasture's syndrome, Graves' disease, CC mellitus, multiple sclerosis, Good pasture's syndrome, Graves' disease, CC osteoarthritis, Sjogren's syndrome, wealtis, ulcerative colitis, CC bacterial, parasitic, fungal, viral, protozoal and helminthic infections) CC growth and development disorders (arteriosclerosis, cirrhosis, hepatitis, CC ushing's syndrome, hypothyroidism, creabral palsy, cataracts); cardio creaturysms, congestive heart failure, angina pectoris, myocarditis, cardio cischaemic heart disease, chronic bronchitis, lung tumours); lipid clischaemic faity liver, Fabry's disease, Niemann-pick's disease, consolidation, obesity). PKIN DNA is useful for assessing CC ishuman PKIN-17 cDNA.
δã
                                                              멍
                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gandhi ..., Gar
Ramkumar J, Gar
Ramkumar J, Gar
Ramkumar J, Gar
Ramkumar J, Gar
Rankumar J, Ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-JUN-2000;
23-JUN-2000;
30-JUN-2000;
07-JUL-2000;
13-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yue H,
Gandhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     diseases such as cancer, comprise human kinase polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New polypeptides, useful for diagnosing, treating or preventing disorders of growth and development, cardiovascular and lipid,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 5; Page 188-189; 197pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-090207/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2897 BP; 599 A; 921 C; 877 G; 500 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (INCY-)
                                                              307
                                                                                                                                                                                     247
                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocal
TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                           CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                               2256;
                                                                                                                         CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG
                                                                                                                                                                                        CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                     CTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P, Bandman O, Borowsky ML, Au-Young J, Lu Y;
Tribouley CM, Walia NK, Yao MG, Lu DAM, Greenwald SR
Griffin JA, Kearney L, Burford N, Nguyen DB, Tang Y
He A, Thornton M, Hafalia A, Patterson C, Gururajan
In F, Recipon SA, Azimzal Y, Policky JL, Ding L;
Fillott VS. Thangavelu K, Batra S, Ison CH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; 2000US-212073P.
; 2000US-213467P.
; 2000US-215651P.
; 2000US-216605P.
; 2000US-218372P.
; 2000US-228056P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96.7%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 2256;
; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2897;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                      318
                                                                                                                                                                                                                                                   258
                                                                                                                                                                                        306
                                                                                                                                                                                                                                                                                                                  246
```

0;

```
. . . . . .
RESULT 3
ABA02995
ID ABA0
XX
AC ABA0
AC ABA0
XX
DT 19-F
XX
DE Huma
XX
Huma
                                                                                                                                      Š
                                                                                                                                                          밁
                                                                                                                                                                         Qy
                                                                                                                                                                                          . 문
                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                    몽
                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                 ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                           2227
 Human;
                                                                                                                     2347
                                                                                                                                                                            2239
                                                                                                                                                                                                                                 2167
                                                                                                                                                                                                                                                   2119
                                                                                                                                                                                                                                                                     2107
                                                                                                                                                                                                                                                                                        2059
                                                                                                                                                                                                                                                                                                          2047
                                                                                                                                                                                                                                                                                                                           1999
                                                                                                                                                                                                                                                                                                                                            1987
                                                                                                                                                                                                                                                                                                                                                                                1927
                                                                                                                                                                                                                                                                                                                                                                                                   1879
                                                                                                                                                                                                                                                                                                                                                                                                                                     1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1459
                 Human protein kinase 2246 coding sequence SEQ ID
                                                       ABA02995;
                                                                        ABA02995 standard;
                                                                                                                                                                                                                                                                                                                                                               1939
                                                                                                                                                                                                                                                                                                                                                                                                                    1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1507
                                     19-FEB-2002
                                                                                                                   AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC
                                                                                                                                                                                          GACGAGAAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCC 2238
                                                                                                                                                                                                                                                                                                      ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                          CAPATATITCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAA 1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCACCCGGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGCCGAGGCCCCCCCAAGGAC 2298
                                                                                                                                                                                                                                         GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                             ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                             AGTCCCACCGGGACCCCGGGGACAACACCACCCCCCAGCCCCGGGGGTGGCGTCGGGGGA 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                    ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                  CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCTCCCCGCGCTCCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCC 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAA
                                    (first entry)
kinase 2246; cytostatic;
                                                                         CDNA;
                                                                         2025
                                                                         ВP
immunomodulator;
                                                                                                                     2382
                                                                                                                                      2334
                   S
carcinoma;
                                                                                                                                                                                                                                                 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1866
                                                                                                                                                                                                                                2226
                                                                                                                                                                                                                                                                   2166
                                                                                                                                                                                                                                                                                                       2106
                                                                                                                                                                                                                                                                                                                         2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1518
```

1458 1506	9 GGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCAGGGGTGGG 	139 144
1398 1446	9 AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGA 	133 138
1338 1386	9 AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC	127 132
1278 1326	19 GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCAC	12: 12:
1218 1266	59 CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC	11:
1158 1206	99 CAGGACCTGCCTCCCGGAATGATGTTGACCCCCCGGGAAGCGTGTGGATTCTCCCATG	10
1098 1146	GGAGCGGTATCCCAGCTGTGAGGAC 	10
1038 1086	79 GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGAGAACCAA	10
978 <sub>.</sub> 1026	19 CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTG	و و
918 966	59 GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCTGGCCGGGTAGCCATG	vo es
858 906	99 GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA 	8
798 846	39 GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGGCTCCTGAGGGGAATGATC	7
738 786	79 GGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC	7
678 726	19 TATGATGGCCGCCGGCCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG	<b>5</b> 0 50
618 666	59 CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAA	<b>о</b> и
558 606	99 AAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTC 	ح <u>ب</u> ن
498 546	39 TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG 	
438 486	79 AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACGTC	ω 4
426	67 TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG	w

Š

Š 밁

Вþ δô õ 밁 õ

δ B

. \_

뭐

밁

밁

밁 Š δ

밁

밁

밁 Š В Š 밁 Š

Ş 밁 Ş

밁

Ş

밁

밁

```
Matches 1477;
                                                                                                                                                                                                                                                                                                   Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                             disorder includes carcinoma, sarcoma, metastatic of haematopoietic disorders (e.g. leukaemias) or cancers of the lung, breast, thyroid, head neck, prostate or genito-urinary tract. The 2246 nucleic acid and polypeptide are also useful for treating immune disorders, e.g. inflammatory (e.g. respiratory inflammation or arthritis), autoimmune disease (e.g. diabetes mellitus, psoriasis, Wegener's granulomatosis, Crohn's disease or Grave's disease), for treating cardiovascular diseases, endothelial cell disorder, viral diseases or pain. The nucleic acid and polypeptide are also useful for evaluating the efficacy of a treatment of cancer or a cellular proliferation and/or differentiation disorder. The nucleic acid is useful for gene therapy. The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to the human protein kinase 2246 gene and the isolated encoded polypeptide with cytostatic, immunomodulator, anti-inflammatory, analysesic and cardiovascular activity. The 2246 nucleic acid and polypeptide are useful for diagnosing, preventing or treating a subject having cancer or a cellular proliferation and/or differentiation disorder or at risk of developing cancer or a cellular proliferation and/or differentiation disorder. In particular, the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New protein kinase nucleic acid and polypeptide molecules, designated 2246, useful for diagnosing, preventing or treating cancer or a cellular proliferation/differentiation disorders, e.g. carcinoma, sarcoma or leukaemias -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anti-inflammatory; analgesic; cardiovascular; cancer; sarcoma; cellular proliferation disorder; cellular differentiation disorder; metastatic; haematopoietic disorder; lukaemia; inmune disorder; inflammatory disorder; arthritis; autoimmune disease; diabetes mellitus; psoriasis; Crohn's disease; cardiovascular disease; virus; pain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-049281/06.
P-PSDB; AAM47830.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-APR-2001; 2001WO-US13784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200181588-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Fig 1; 111pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25-APR-2000; 2000US-199391P
                                                                                                                                                                                                                                                                                                                                                               Sequence 2025 BP; 442 A; 641 C; 616 G; 326 T; 0 other;
  149
                                             194
                                                                                                                                    134
                                                                                         89
                                                                                                                                                                                  29
                                                                                                                                                                                                       CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        therapy; ss.
TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC
                                           TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC
                                                                                         CAGGTCTGGTGAAGCTGGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCCATCAAGATCG
                                                                                                                                 CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 193
                                                                                                                                                                               CGCAGCACGCGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGCAGA 88
                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                 ĺS
                                                                                                                                                                                                                                                                                                                                                                                                                 that of the 2246
                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
1..2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/product= "protein kinase 2246"
                                                                                                                                                                                                                                                                                           41.2%;
70.1%;
                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                        Score 961; DB 24;
Pred. No. 1.1e-198;
O; Mismatches 435;
                                                                                                                                                                                                                                                                                                                                                                                                             coding sequence.
                                                                                                                                                                                                                                                                                                                      Length 2025;
                                                                                                                                                                                                                                                                           Indels 195;
                                                                                                                                                                                                                                                                        Gaps
                                           253
                                                                                         148
208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뮺
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                              8
                                                                                                              밁
                                                                                                                                                     Š
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                       1103
                                                                                                                                                                                                                                                                                                1043
                                                                                                                                                                                                                                                                                                                                              1094
                                                                                                                                                                                                                                                                                                                                                                                                                                       1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGCTCATTGAGCACCCCCACGTCCTAAAGCTGCACGTCTTATGAAAACAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAATATGATGGCCGGCCGGGCAGACATGTGGGAGCTGTGGGAGTCATCCTCTTCGCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 313
                                                                                                                                                                                                                                    CCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCA 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGA 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCATGCGGAGCCTGCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCAT 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGCGTGTTCCACATGCCGCACTTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGTGGGGGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGTATGACGGCCGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCTGTTGGAGACCAGCTGTGGGTCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGAGAAGAACAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTTCTGCCACAGCCACTATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCCTAAAGCCCGGAGAACCTGCTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG
                                                                   AGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTC
                                                                                                                                                          TCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCCACCGGCCCTTGGAGATGGCCC
                                                                                                                                                                                                                                                                                              ACCAAGAAAAGATGATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATCCGCTCGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATAGGGGGCAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGCGAGGTGGACGCCGCCGCCTCACGCTAGAGCACATTCAGAAACACATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAC 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA
                        AGCACGGCCAGAGGTCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTTCCACCAGCCCAC
                                                                                                                 TGAC---
                                                                                                                                                                                                          CGATGCTGAACCGGCACGGCAAGCGGCGGCCAGAACGCAAATCCATGGAGGTGCTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                            GGACGGCGCTCCCCGGTGCCTGCGCGGCGGGCCATTGAGATGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           553
                                                                                                                                                                                                                                                                                                                                                                                            1042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             328
                                                                                                                                                            1273
                                                                                                                                                                                                          1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           628
                                                                                                                                                                                                                                                                                                   1102
                                                                     1333
                                                                                                                 1213
```

84 84 B

ş

밁

```
RESULT 4
ABA02994
ID ABA0
XX
AC ABA0
AC ABA0
XX
DT 19-F
XX
DE Huma
XX
KW Anti
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                           δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                     1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1694
Human; protein kinase 2246; cytostatic; immunomodulator; carcinoma; anti-inflammatory; analgesic; cardiovascular; cancer; sarcoma;
                                              Human protein kinase 2246 encoding cDNA SEQ ID NO 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1454
                                                                                  19-FEB-2002
                                                                                                                    ABA02994;
                                                                                                                                                   ABA02994 standard; cDNA; 2217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1287
                                                                                                                                                                                                                                   TGTCAGA 1940
                                                                                                                                                                                                                                                                TGGCAGA 2180
                                                                                                                                                                                                                                                                                                                TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                   GTGGCATCTACTCCGTCACCTTCACCTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCG 1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGGCATCTACTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                              TGGACATCAGCTCCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAAGCCCGTCCGCTTCCAGG 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCACGCCTTCCTGTCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCCAAACGAGCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCA 1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAG 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGAGCCCGGCTGGCACGCCCAACCCCACGCCCCGTCCAGCCCC-----AGCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCCAGGCTCCCCGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGGGGCCCGGGGAGCAGCCCCCCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCC 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGGCTGGAGATGAGG 1393
                                                                                                                                                                                                                                                                                                 TGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCAGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGAGCAGATCTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTCGTCCCCAGAGCTGGCGAAGAAGTCCTGGTTTGGGAACTTCATCAGCCTGGAGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTTCCACCGCCGGAAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC 1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGG 1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAGCAGCCCCG------
                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -ACCCCCAAGGGGACACCTGTCCACACGCCAA 1357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---- 1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1471
                                                                                                                                                                                                                                                                                                                                                                1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1411
```

```
밁
                                                 Q
                                                                                                    Ъ
                                                                                                                                            δã
                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to the human protein kinase 2246 gene and the CC the isolated encoded polypeptide with cytostatic, immunomodulator, cc anti-inflammatory, analyssic and cardiovascular activity. The 2246 cc nucleic acid and polypeptide are useful for diagnosing, preventing or treating a subject having cancer or a cellular proliferation and/or cc differentiation disorder or at risk of developing cancer or a cellular cc proliferation and/or differentiation disorder. In particular, the cc disorder includes carcinoma, sarcoma, metastatic or haematopoietic cl disorders (e.g. leukaemias) or cancers of the lung, breast, thyroid, head cneck, prostate or genito-urinary tract. The 2246 nucleic acid and cc polypeptide are also useful for treating immune disorders, e.g. clinchamatory (e.g. respiratory inflammation or arthritis), autoimmune cdisease (e.g. diabetes mellitus, psoriasis, Wegener's granulomatosis, cc inflammatory disease or Grave's disease), for treating cardiovascular cc disease, endothelial cell disorder, viral diseases or pain. The nucleic acid and polypeptide are also useful for evaluating the efficacy of a creatment of cancer or a cellular proliferation and/or differentiation cc disorder. The nucleic acid is useful for gene therapy. The present cc sequence is that of the 2246 encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity Matches 1477; Conserv
                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2217 BP; 476 A; 715 C; 682 G; 344 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Fig 1; 111pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New protein kinase nucleic acid and polypeptide molecules, designated 2246, useful for diagnosing, preventing or treating cancer or a cellular proliferation/differentiation disorders, e.g. carcinoma,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sarcoma or leukaemias
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-049281/06.
P-PSDB; AAM47830.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-APR-2000; 2000US-199391P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-APR-2001; 2001WO-US13784.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cellular proliferation disorder; cellular differentiation disorder; metastatic; haematopoietic disorder; leukaemia; immune disorder; inflammatory disorder; arthritis; autoimmune disease; diabetes mellitus; psoriasis; Crohn's disease; cardiovascular disease; virus; pain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200181588-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene therapy; ss.
                                                                                                    139
                                                                                                                        134 CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG 193
                                                      194
                                                                                                                                                                                                  79
                                                                                                                                                                                                                                       74 CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 133
TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC
                                                                                               CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG
                                                                                                                                                                                           CGCAGCACGCGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGCAGA 138
                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers 51..2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag=  a
/product= "protein kinase 2246"
                                                                                                                                                                                                                                                                                                                 41.2%;
70.1%;
                                                                                                                                                                                                                                                                                        0; Mismatches 435;
                                                                                                                                                                                                                                                                                                                   Pred. No.
                                                                                                                                                                                                                                                                                                                                    Score 961;
                                                                                                                                                                                                                                                                                                              1.1e-198;
                                                                                                                                                                                                                                                                                                                                       DB 24;
                                                                                                                                                                                                                                                                                      Indels 195; Gaps
                                                                                                                                                                                                                                                                                                                                       Length 2217;
  258
                                                                                               198
                                                                                                                                                                                                                                                                                      6
```

いった。これではいっているとのでは、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これ	TANCONCOCANCENC	122	Ş
AGAGGTCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTCCACCAGCCCAC 1323	ົດ –	1264	DЬ
AGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCC	AGCCAG	1274	δ
GACGGACGGCGGCTCCCCGGTGCCTGCGCGGCCGATTGAGATGGCCC 1263	TGACGGA	1213	B 4
121	CGATGCTGAACCGGCA		}
CATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCCATGGAAGTCCTGAGCA 1213	CCATGCTGAGCCGTCA	1154	δ
CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC 1153 	AGGACCAGGACCTGCC	1094	р Q
atgatttacttcctcctcctggaccggaaagaaaggtacccga	CAGGAGAAG	1033	뫄
NTGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATC	ACCAAGAAAAGATGAT	03	γ
GCTTCCGAGACCGCAACAAGCTGCTGCAGGACCTGCTGCTGCCGAGGAGGAGA 1032	CACTGGGCTGCTTCCG	973	망
GGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAG	ACTGGGCTGCTTC	974	Qy
ATCCGCTCGCTGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT 972	AGATCCGCTCGCTGCC	913	В
ACCCCGACGTCCTAGAGAGCAT	CCATGCGGAGCCTGCC	914	δõ
GGCAAGAATGAGCCCGAACCAGAGCAGCCCATTCCTCGCAAGGTGC 912	ATATAGGGGGCAAGAA	859	밁
GGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGGGTAG 913	TAGGC	854	Qy
GACGCCGCACGCCTCACGCTAGAGCACATTCAGAAACACATATGG	TGAGCGAGGTGGACGC	799	망
GGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTG	TCGAAG	794	Qy
TETTCCACATGCCGCACTTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCA 798	GGGCGTGTTCCACAT	739	밁
. S	GGGCG	734	Qy
GGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGC 738	GTGGG	679	밁
ACGACAACCTCCGCCAGCTGCTGGAGAAGGTG	TCGTGGGGGCTCTGCC	674	Qy
ATGACGGCCGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGC 678	AGAAGTATGACGGCCG	619	Ф
ATGGCCGCCGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC 673 \	AAAAT	614	νQ
GCTGTTGGAGACCAGCTGTGGGTCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGG 618	GCCTGTTGGAGACCAG	559	망
AGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG 613	GCCTCCTGGAGACCAG	554	γQ
	ACGAGAAGAACAACATO	499	рb
ACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACA 553	ATGAGAAAAACAACAT	494	Qγ
ACTTCTGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGAAAACCTCCTGCTGG 498	ACTTCTGCCACAGCCA	439	В
ACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGG 493	ACTTCTGCCACAGCTA	434	Q
AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG 438	AGGGGAGGCTGACGCC	379	В
TGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGG 433	AGGGGAGACTGACGCC	374	Qy
PAGAACACGTGTCAGGTGGTGAAGCTCTTCGACTACCTGGTGAAGA 37	ATTIGTACCTGGTGCT	<b>~</b> +	라 5
J	▼ 単一	_	2
	TGAAGCTCATTGAGCA	G	밁
TCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 313	TGAAGCTCATCGAACA	254	γQ

1334 TAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGG 1393

H 10	Db Db	Oy Ob	Оy	Db Qy	pb Qy	Qу Дъ	Qy Db	D Qy	Qy Db	Qy Db	Qy Db	DP QA	Db Qy	Db	Qy	타
UULT 5 334315 AAD34315 standard; cDNA; 2647 BP. AAD34315;  16-JUL-2002 (first entry)  Human PKIN-18 cDNA.  Human; kinase; enzyme; PKIN-18 protein; immune system disorder; anaemia; acquired immune deficiency syndrome; thymic hypoplasia; Crohn's disease; asthma; neurological disorder; epilepsy; Charcot-Marie-Tooth disease;	2174 TGGCAGA 2180          1 1984 TGTCAGA 1990	2114 TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC 2173	2054 GTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAG 2113	1994 TGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG 2053	1934 GGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGG 1993 	1874 TCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCA 1933	1814 AAGAACAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCG 1873 	1754 AGTCCTCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAG 1813	1694 GCTTTCACCGGCGAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG 1753 	1634 GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC 1693	1574 GGGCCAGTCCCACCGGGGACACCACACACACCCCCGGGGGTGGCGTCG 1633	1514 CCCCAGGCTCCCGCGCTCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCC 1573	1454 GTGGGGGGCCCGGGGAGCAGCCCCCGCCCCAGTGCCCGCTCCACACCCCTGCCCGGCC 1513	1337 1336	1394 CTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGG 1453	1324 TCAGCAGCCCCG 1336

```
Qy
                          Š
                                                        В
                                                                                                                                      δÃ
  밁
                                                                                                               ф
                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 1473; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31-AUG-2000;

08-SEP-2000;

14-SEP-2000;

22-SEP-2000;

29-SEP-2000;

06-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Thornton M,
Azimzai Y,
Ramkumar J,
                                                                                                                                                                                                                                                                                                               The present invention relates to human kinases (PKIN) and polynucleotides encoding such proteins. PKIN sequences of the invention are useful for diagnosing, treating or preventing disorders associated with aberrant expression of PKIN, particularly immune system disorders (e.g. acquired immune deficiency syndrome (AIDS), thymic hypoplasia, Crohn's disease, anaemia, asthma), neurological disorders (e.g. epilepsy, Charcot-Marie-Tooth disease or seizures), cell proliferative disorders (e.g. cancers
                                                                                                                                                                                                                                                           such as adenocarcinoma, léukaemia, lymphoma, melanoma, myeloma, sarcoma), and developmental disorders (e.g. Down's syndrome). They are also used in gene therapy and protein therapy. The present sequence is a cDNA encoding human PKIN-18 protein.
                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                             New human kinases, useful for diagnosing, treating or preventing immune system disorders (e.g. Crohn's disease), neurological disorders (e.g. epilepsy), or cell proliferative disorders (e.g. cancers such as leukemia or lymphoma)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gururajan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-MAR-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200218557-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (INCY-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AIDS; seizures; cell proliferative disorder; cancer; adenocarcinoma; leukaemia; lymphoma; melanoma; myeloma; sarcoma; developmental disorder; Down's syndrome; gene therapy; protein therapy; cytostatic; gene; ss.
  151
                                                                                    148
                                                           91
                                                                                                                                             88
                                                                                                                  31
                                                     CTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAG
                                                                                                              TATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGACAGGTCTGGTGAAG
 CTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCCTGAAGCTCATTGAG
                          CTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAA 267
                                                                                                                                           sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INCYTE GENOMICS
                                                                                                                                                                                                                                  2647 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Page 212-213; 218pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R, Ding L, Pat
4, Elliott VS,
Burrill JD, 1
J, Warren BA, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     æ
                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nguyen DB, Walia NK, Haf
, Ding L, Patterson C, Y
Elliott VS, Lu Y, Ison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; 2000US-229873P.
; 2000US-231357P.
; 2000US-232654P.
; 2000US-234902P.
; 2000US-236499P.
; 2000US-238389P.
; 2000US-240542P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001WO-US27219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
1..1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/product= "Human PKIN-18 protein"
                                                                                                                                                                                                                                525 A;
                                                                                                                                                                                       41.0%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Marcus GA,
Kearney L,
                                                                                                                                                                                                                                885 C;
                                                                                                                                                                        0;
                                                                                                                                                                      Score 955.8; DB 24; Length 2647;
Pred. No. 1.6e-197;
0; Mismatches 437; Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                  789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hafalia AJA, Yao MG, Gandhi AI

Yue H, Baughn MR, Tribouley

Son CH, Au-Young J, Tang YT;

Zingler KA, Lu DAM, Lal PG;

Policky JL, Thangavelu K;
                                                                                                                                                                                                                                G; 448
                                                                                                                                                                                                                                Ŧ,
                                                                                                                                                                                                                                0 other;
                                                                                                                                                                        Gaps
                                                                                                                 90
210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CM;
                                                                                                                                                                        6
```

```
1045
                                                                                                                                               1105
                                                                                                                                                                                1168
                                                                                                                                                                                                                                                    1108
                                                                                                                                                                                                                                                                                                                        1048
                                                                                                                                                                                                                                                                                       985
                                                                                                                                                                                                                                                                                                                                                            925
                                                                                                                                                                                                                                                                                                                                                                                            988
                                                                                                                                                                                                                                                                                                                                                                                                                                865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             271
                    TCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGGCCCTAAGGCAGCCCAAGG
                                                                                        GGTGGTGGCTCCCCTGTACCCCACCCGACGGGCCTTGGAGATGGCCCAGCACACGCCAGAGA 1287
                                                                                                                                                                            CACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACCGATGCCGGG
                                                                                                                                                                                                                               CCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCCATGCTGAGCCGT 1167
                                                                                                                                                                                                                                                                                                                                                         CCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCTTCGACGATGACAACTTGCGACAGCTGCTGCAGAAGGTGAAGCGGGGGCGTGTTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTCGGTCCATCAGCGGTGCCTCCTCAGGCCTTTCCACCAGCCCACTCAGCAGCC---
                                                                   GACGGCGGCTCCCCGGTGCCTGCGCGGCCGGCCATTGAGATGGCCCAGCACGGCCAGAGG
                                                                                                                                         CACGGCAAGCGGCGAGAACGCAAATCCATGGAGGTGCTCAGCGTGAC-----G
                                                                                                                                                                                                             CCCCCCGGAACGAGATAGACCCTCCCCGGAAGCGTGTGGACTCCCCGATGCTGAACCGG
                                                                                                                                                                                                                                                                                   ATTTACTTCCTCCTGGACCGGAAAGAAAGGTACCCGAGCCAGGAGGATGAGGACCTG
                                                                                                                                                                                                                                                                                                         ATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGACCTG
                                                                                                                                                                                                                                                                                                                                                                                          AGGGACCGCGAGAGGCTGCGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                             AATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGCAGATCCGCTCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGGGTAGCCATGCGGAGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGCACGCCCCCCCACGCTAGAGCACATTCAGAAACACATATGGTATATAGGGGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAA 867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCCGCACTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCATGATCGAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGCTGGTGGGGGCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTGTGGGTCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGGAGAAGTATGACGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGAGAGGGGAGACTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAAACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGGACTTCTGCCACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTAGAACACGTGTCAGGTGGAGCTCTTCGACTACCTGGTGAAGAAGGGGAGGCTGACG
                                                                  1215
                                                                                                                                                                                                             1104
                                                                                                                                                                                                                                                                                   1044
                                                                                                                                                                                                                                                                                                                      1107
                                                                                                                                                                                                                                                                                                                                                                                          1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            690
                                                                                                                                                                                                                                                                                                                                                         984
                                                                                                                                                                                                                                                                                                                                                                                                                                                              987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    570
```

δÃ 밁 . 2 밁 δã 밁 Ş 밁 δÃ 닭 Ş 밁 δÃ 맑 Š 밁 Š 밁 õ 밁 Ş 밁 Ş 밁 δÃ 밁 ρy 밁 Qy 밁 Š 밁 Q В Q

```
S
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
   EEXEXEXEX
                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                            1936
Human; cytokine; cell proliferation; cell differentiation; growth factor;
haematopoiesis regulation; tissue growth; immunomodulator; activin;
                                                     Human HrPOPK-1 homologue-encoding cDNA, SEQ ID NO:72.
                                                                                          11-JAN-2002
                                                                                                                              ABA08296;
                                                                                                                                                                  ABA08296 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAATATTC 1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGGCGCGCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCCCGCTTCCACCGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGACCCCGGGGACAACACCACCCCCCAGCCCCGGCGGTGGCGTCGGGGGAGCCGCCTGG 1647
                                                                                                                                                                                                                                                                                                                                                                                                    TCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGCAGCGGAGGTGGTGGCATCTACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGACATCAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCGTGCACGCCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAGAGTCGTCCCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAG 1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGCGC 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCACC 158:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCCCTCACCCTCACCAAGGGGCAGTCCCCTCCCC--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCAGCCCCCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCCAGGCTCCCCG 1527
                                                                                                                                                                                                                                                          AACTG 1940
                                                                                                                                                                                                                                                                                            AACGG 2192
                                                                                                                                                                                                                                                                                                                                CAGGCCCAGCTGCTGAGCACACGACCCGCCTGCGGCCCAGCACTTGTCAGACACCACT 1935
                                                                                                                                                                                                                                                                                                                                                              CAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAG 2187
                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCACCTTCACTCTCACTCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATC 2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCACGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGGTTGATATCACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCAAACGAGCTTCCGGGCCGAGTACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGATCCCCAGCCTGAGTCACAGTGTGTCTCACAGACCAGCTTCAGGGCCGAGTACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCACGCCCAACCCCACGCCCCGTCCAGCCCC----AGCGTCGGAGGGGTGCCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCCAGGGGTGGGGGGCCCGGG 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGGAGGGT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGGC 1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ------ACCCCCAAGGGGACACCTGTCCACACGCCAAAGGAGAGCCCGGCT 1359
                                                                                         (first entry)
                                                                                                                                                                 CDNA; 906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------GGGGAGGCGCAGAAGGAGAACGGCATCTACTCC
                                                                                                                                                                                                                                                                                                                                                                                                    1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1270
```

inhibin; chemotaxis; chemokinesis; thrombolysis; oncogenesis; proliferation; metastasis; cancer; tumour; haematopoletic disorder; myeloid cell disorder; tymphoid cell disorder; arthritis; chronic inflammatory condition; proliferative retinopathy; atherosclerosis; coronary heart disease; arterial ischaemia; cell culture; drug screening; gene therapy; antiinflammatory; antiasthmatic; antiarthritic; haemostatic; antiarteriosclerotic; cytostatic; osteopathic; vasotropic; cardiant; virucide; antibacterial; antifungal; vulnerary; antiulcer; bone disorder; osteoporosis; vascular growth disorder; tissue regeneration; wound healing; infection; immune disorder; 88

PD OS XXX

05-FEB-2001; 2001WO-US03800

03-FEB-2000; 2000US-0496914 27-APR-2000; 2000US-0560875

(HYSE-) HYSEQ INC.

Tang YT, Liu C, Drmanac

P-PSDB; ABB11052. 2001-457740/49.

PT

e.g. arthritis and cancer Human proteins and DNA encoding sequences useful for preventing, treating or ameliorating a medical condition in a mammalian subject

Claim 1; Page 364-365; 1963pp; English.

Sequences ABB10981-ABB12330 represent 1350 novel human polypeptides, and convenion also relates to vectors and recombinant host cells comprising a contibodies against the polypeptides, methods of detecting the nucleotides of the invention, methods of producing the novel polypeptides, cantibodies against the polypeptides, methods of identifying compounds which to bind to polypeptides of the invention. Although novel, many of the polypeptides in a sample, and methods of identifying compounds which to bind to polypeptides of the invention have homology to known proteins, thereby complying an insight into their probable biological activities, and hence polypeptides of the invention have homology to known proteins, thereby components which their probable biological activities, and hence polypeptides of the invention may differentiation activities; including cytokine, cell proliferation or cell differentiation activities; including cytokine, cell proliferation or cell components of the invention are call growth factor activities; or may be involved in oncogenesis, cancer cell proliferation, thrombotic or thrombotyltic activities; receptor or ligand activities; or may be conditions, e.g., by protein or gene therapy. Such conditions include and conditions, e.g., by protein or gene therapy. Such conditions include cancers, haematopoletic disorders (e.g., myeloid or lymphoid cell cancers, haematopoletic disorders (e.g., myeloid or lymphoid cell cancers, haematopoletic manuformal conditions in clude cancers, haematopoletic, brombotic or vascular growth. Polypeptides involved with tissue regeneration and crepair (or nucleit acids encoding them) may be used to promote wound cancers arterial and fungal infections in addition to immune disorders.

Component cell growth factor activities may be used to promote wound the polypeptides and nucleotides and polypeptides and nucleotides and polypeptides and nucleotides and nucleotides are only to the polypeptides and nucleotides and nucleotides are only to the polypeptides and nucle

```
RESULT 7
ABA08924
ID ABA0
XX
AC ABA0
                                                                         밁
                                                                                         Š
                                                                                                                 밁
                                                                                                                                δ
                                                                                                                                                           밁
                                                                                                                                                                             QΥ
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SS X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
 ABA08924;
                     ABA08924 standard; cDNA; 614 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 906 BP; 205
                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                   781
                                                                                                                                      753
                                                                                                                                                            721
                                                                                                                                                                               693
                                                                                                                                                                                                    661
                                                                                                                                                                                                                         633
                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                  573
                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                           513
                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                   453
                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                            393
                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                   333
                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۳
                                                                        AAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAA 866
                                                                                                                CCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGCCCGA
                                                                                                                                                           GGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCCTCTGCCCTT
                                                                                                                                                                                                                                                      CGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCG
                                                                                                                                                                                                                                                                                                                             CATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCG
                                                                                                                                                                                                                                                                                                                                         CATCTGCCACAGAGACCTAAAGCCCGGAGAACCTTCTTGGATGAGAAAAAACAACATCCG
                                                                                                                                                                                                                                                                                                                                                                    GCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTCGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCCTTCTCCACATGCC
                                                                                                                                                                                                   GGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCTT
                                                                                                                                                                                                                                                                                     CATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCTG
                                                                                                                                                                                                                                                                                                         CATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                   GCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCAA 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGTCTGCCCGGGGCTCATGGGACCTGCTCTCAGGCTTTCCCAGGTACCTGGTTCTGGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCCCCGGATGAACTGACATCAGGTCCGTCGATGCTGGCGCAGGTTTCACCACACGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTCATCGAACACCCACATGTCCTCAAGCTCCACGGCGTCTACGAGAACAAGAAATATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCT-GAA 257
                                                                                                                                                                                                                                           CGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28.2%;
87.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; 253 C; 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 658.8;
Pred. No. 2.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   G; 181 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; DB 22; Length 906;
.9e-133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 106;
                                                                         894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                      812
                                                                                                                                                                             752
                                                                                                                                                                                                                       692
                                                                                                                                                                                                                                                                632
                                                                                                                                                                                                                                                                                     600
                                                                                                                                                                                                                                                                                                                                                  512
                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                         452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                           780
                                                                                                                                                                                                  720
                                                                                                                                                                                                                                             660
                                                                                                                                                                                                                                                                                                         572
                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
```

11-JAN-2002 (first entry)

Ser/Thr kinase homologue-encoding CDNA, SEQ Ħ NO:700

bone disorder; osteoporosis; vascular growth disorder; tissue regeneration; wound healing; infection; immune disorder; cell culture; drug screening; gene therapy; antiinflammatory; antiasthmatic; antiarthritic; haemostatic; antiarteriosclerotic; cytostatic; osteopathic; vasotropic; cardiant; virucide; antibacterial; haematopoiesis regulation; tissue growth; immunomodulator; activin; inhibin; chemotaxis; chemokinesis; thrombolysis; oncogenesis; proliferation; metastasis; cancer; tumour; haematopoietic disorder; myeloid cell disorder; lymphoid cell disorder; asthma; arthritis; chronic inflammatory condition; proliferative retinopathy; atherosclerosis; coronary heart disease; arterial ischaemia; cytostatic; osteopathic; vasotrop
antifungal; vulnerary; antiulcer; Human; cytokine; cell proliferation; cell differentiation; growth factor; hapmatonoiesis regulation; tissue growth; immunomodulator; activin; SS

Homo sapiens.

WO200157188-A2

05-FEB-2001; 2001WO-US03800.

PXRRX 03-FEB-2000; 2000US-0496914. 27-APR-2000; 2000US-0560875.

Tang YT, Liu C, Drmanac 꼅

(HYSE-) HYSEQ INC.

2001-457740/49

P-PSDB; ABB11680

Human proteins and DNA encoding sequences useful for preventing, treating or ameliorating a medical condition in a mammalian subjecg. arthritis and cancer subject

Sequences Claim 1; Page 648; 1963pp; English. ABB10981-ABB12330 represent 1350 novel human polypeptides,

cc sequences ABBL034 represent 1350 novel numan polypeptides, and celectical also relates to vectors and recombinant host cells comprising a nucleotide of the invention, methods of producing the novel polypeptides, and the polypeptides in a sample, and methods of identifying compounds which compressing a producing the novel polypeptides or polypeptides in a sample, and methods of identifying compounds which thind to polypeptides of the invention. Although novel, many of the polypeptides of the invention have homology to known proteins, thereby giving an insight into their probable biological activities, and hence compounds which the polypeptides of the invention have homology to known proteins, thereby giving an insight into their probable biological activities, and hence compounds activities, including cytokine, cell proliferation may be have various activities, including cytokine, cell proliferation or cell differentiation activities, activity; tissue growth activity; including cytokine, cell proliferation or cell commonomodulatory activity; activine or inhibinerelated activities; compounds activities; paemostatic, thrombotic or chemokractic or chemokractic activities; haemostatic, thrombotic or chemokractic or chemokractic cartivities; receptor or ligand activities; or may be involved in oncogenesis, cancer cell proliferation or metastasis.

CC pepending on their biological activities, polypeptides and nucleotides of the invention are useful for preventing, treating or ameliorating medical conditions, e.g., by protein or gene therapy. Such conditions include cancers, hamalogical activities, polypeptides and nucleotides of proliferative retinopathy, atherosclerosis, coronary heart disease, coronary hear

Polypeptides with growth factor activity may be used in cell cultures

ç

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Б
XSXEXEXEXXXX
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 promote cell growth. For example, such polypeptides may be used to manipulate stem cells in culture to give rise to neuroepithelial cells that can be used to augment or replace cells damaged by illness, autoimmune disease or accidental damage. The polypeptides and nucleotides may also be used in the diagnosis of the above conditions, and in drug may also be used in the diagnosis of the above conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1718 TCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGGAGCTGGCAAAAC 1777
                                                  Human; ss; gene; lung cancer; cytostatic; tumour; vaccine.
                                                                                     Human lung cancer associated cDNA SEQ ID
                                                                                                                                                                                           ABK70216 standard; cDNA; 512 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 614 BP; 128 A; 226 C; 161 G; 99 T; 0 other;
                                                                                                                        15-JUL-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                              2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     novel human polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      screening techniques. The present sequence represents a cDNA encoding a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCA
                                                                                                                                                                                                                                                                                                                                                                             CAGAGCTGAGCAGCTCTCCCCCGCGAGGCCCCCCAAGGACAAGAAGCTCCTGGCCACCA 2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGAACGAGAACAACGGGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGC 2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCA 189:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCCTGGTTCGGGAACTTCATCTTCGTTGGACAAAGAAGAACAAATATTCCTCGTGCTAA 183
                                                                                                                                                                                                                                                                                    ACGGGACCCCTCTG
                                                                                                                                                                                                                                                                                                                      ACGGGACCCCTCTG 2331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGAGCCCTCCCCGCGACGGGACGCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTC 201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTGAGTCACAGTGTGCTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCG 1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAAC 60
                                                                                                                                                                                                                                                                                                                                                                                                                              AGACCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCCCCACCCGGCCGCCCAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                      614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 614;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.3e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 22; Le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
```

Ş 밁 Qy

181 699 121 639

CGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACATGCCCCACTT CGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCCACTT

758 180

240

CATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCCTTTGATGA CATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCCTTTGATGA 698

Gaps

```
PR
   밁
                                                                 γ
                                                                                                                                             밁
                                                                                                                                                                                                           ğ
                                                                                                                                                                                                                                                                                                                                                                                                                          CC component consisting of carriers and immunostimulants, and a second CC component selected from the polynuclectides, proteins, antibodies, fusion CC proteins, T cell populations and antigen presenting cells expressing the CC polypeptide; methods for stimulating an immune response or treating CC comprising at least one of the oligonucleotide of, or an antibody and a comprising at least one of the oligonucleotide of, or an antibody and a CC comprising at least one of the oligonucleotide of, or an antibody and a CC comprising at least one of the oligonucleotide of, or an antibody and a CC comprising at least one of the oligonucleotide of, or an antibody and a CC comprising and for diagnosis and monitoring of such cancer. The CC lung cancer, and for diagnosis and monitoring of such cancer. The CC used to stimulate or expand T cells specific for a tumorous protein. CC The polynucleotides may be used as probes or primers for nucleic acid comprising the present sequence is one of the 183 lung cancer associated contents of the present sequence is one of the 183 lung cancer associated contents of the content
                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antibody, or its antigen-binding fragment that specifically binds to the polypeptide; a method for detecting the presence of a cancer in a patient; a fusion protein comprising at least the polypeptide; an oligonucleotide that hybridises to the polynucleotide under moderately stringent conditions; a method for stimulating and/or expanding T cells specific for a tumour protein; an isolated T cell population comprising cells prepared from the method of above; a composition comprising a first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or their fragments, homologues, variants or complements and their encoded polypeptides. Also included are an expression vector comprising the polynucleotide operably linked to an expression control sequence; a host cell transformed or transfected with an expression vector of; an isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-SEP-2000; 2000US-234837P.
10-OCT-2000; 2000US-239440P.
29-JUN-2001; 2001US-301928P.
                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 512 BP; 108 A; 149 C; 166 G; 89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to an isolated polynucleotide comprising a sequence selected from 183 human DNA sequences (appearing as ABK70110-ABK70312),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 132-133; 189pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New tumour lung proteins and nucleic acids encoding the proteins, useful as vaccines and for treating, preventing, diagnosing or monitoring lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Benson DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200224057-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-SEP-2001; 2001WO-US42232
                                                                     579
                                                                                                                                                                          519 AGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTC 578
   61
                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                             \vdash
                                    CCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGCCAGA 638
CCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGA 120
                                                                                                                                          AGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTC 60
                                                                                                                                                                                                                                                                                512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mohamath
                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                    21.9%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lodes
                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                    Score 512; pred. No.
                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                    1.6e-101;
                                                                                                                                                                                                                                                                                                                                                     DB 24;
                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                Indels
```

the

δð В δ 밁 δõ 밁 δō

Š 밁

481 999 421 939 361 879 301 819 241 759

26-MAR-2002 ABL10489;

2720;

Gaps

ŗ

88

148

```
(ABB57737-ABB72072).

The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from specification.
                                                                                                            The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABLIG176-ABL30511), expressed DNA sequences (ABLIG175) and the encoded proteins
                                                                                                                                                                                                                                                                 Claim 1; SEQ ID NO 25949; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                        New isolated nucleic acid genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster expressed polynucleotide SEQ ID NO 25949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pharmaceutical;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABL10489 standard; cDNA; 2720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATCCGAGCCTGCCATCCAACGG 938
                                                                                                                                                                                                                                                                                                                                                                                                   2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGCTGCATCGCGAGCTGCGCAGTGAGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORP NY
                                                                                                                                                                                                                                                                                                                                                                                                                                         Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
 B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene;
661 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŀ
715 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                           PWD,
                                                                                                                                                                                                                                                                                                                        detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 βP
                                                                                                                                                                                                                                                                                                                                                                                                                                         Myers
 759
ç
                                                                                                                                                                                                                                                                                                                                                                                                                                           뙫
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              512
585 T;
 other
                                                                                                                                                                                                                                                                                                                        1000
and c
                                                                                                                                                                                                                                                                                                                        0 or more cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                           WIPO
                                                                                                                                                                                                            is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . .
                                                                                          B
                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                   밁
                                                   Š
                                                                                                                                                                     В
                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                               Ωy
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        덩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 137
                                                                                            926
                                                                                                                                                                       866
                                                                                                                                                                                                                                                809
                                                                                                                                                                                                                                                                                                                        749
                                                                                                                                                                                                                                                                                                                                                            797
                                                                                                                                                                                                                                                                                                                                                                                                     689
                                                                                                                                                                                                                                                                                                                                                                                                                                       737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77
                                             AAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGG
                                                                                                                                                                     CACACGTTATTCCCACAGCCACCGCGGTGGATCCGGATGTGTTGAACGCGATTTGCTCGC
                                                                                                                                                                                                                                                                                                                                              TCGAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGAGAAGGTTATATTTCCTGTTGCTCGAGCGCAAACGAAGACGACCTGCGCTGGAGG
                                                                                        TGGGCTGTTTCAAGGAGAAGGAGAAACTCATCCAGGAACTGCTCAGTTCAAGTCACAATA
                                                                                                                TGGGCTGCTTCAGGGACCGCGAGAGGGCTGCCATCGCGAGCTGCGCAGTGAGGAGGAGAACC
                                                                                                                                                                                                        TGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCAC
                                                                                                                                                                                                                                              CAGCTGGCGGCAAAGGG----GAGCTGGAGCTGCATGCCAATGATGGAGGTGGTGCAGA
                                                                                                                                                                                                                                                                                 TTGAGGTCAATCCGGACCGGCGCTCACGCTGGCTGAAATCAACCGGCATCCGTGGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTGGAGACCTCCTGCGGCAGCCCACACTACGCGTGTCCAGAGGTCATACGGGGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAAAACAACAICCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTGCCACTCGCATTCGATTTGCCATCGCGACTTGAAGCCGGAGAATCTGCTGCTGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCGGGAGAAGCTGTCGGAGTCGTGGTGGTGAAGGTGGAGCGGGAGATCCCCATCCTGA 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCTCGTCAAGTTGGGCGTGCATTGTGTGATTGGCAAGAAGGTTGCGATTAAAATAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGTCTTTCACATACCGCACTTTGTGCCGCCGGACTGCCAGAGTCTGCTGCGCGGCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGTGCGTTGCCCTTCGACGACGACACTTGCGCCAGCTGCTGGAGAAAGTCAAGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTACGATGGCCGCAAGGCGGATGTCTGGTCCTGTGGGGGTCATCCTCTATGCCCTCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGATTGACGCCGAAGGGCGCGCAAGTTCTTCAGGCAAATCATCTCCGCCCTGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTATTTGATATTGGAGCATGTATCCGGCGGAGAGCTCTTCGATTACCTGGTGAAGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTAATCGATCATCCACACGTCCTTGGCCTGAGCGATGTGTACGAGAACAAGAAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCGCGAGAAACTCAGCGAATCGGTGCTAATGAAGGTTGAACGTGAAATCGCCATAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGA 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 692;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 470.8;
Pred. No. 2e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2e-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
```

568 616 508 556

676

436

328 376 268 316 208

496 388

448

(PEKE ) PE

11-JUL-2000; 23-MAR-2000;

Venter JC,

Sequence

2720

õ

1097

1036

976 865 856 748 796 688 736 628

```
RESULT 10
AAK94923
                                                                                                                                                                                                                                                                  õ
                                                        Ş
                                                                                       밁
                                                                                                                 õ
                                                                                                                                               밁
                                                                                                                                                                           S
                              밁
                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                         The invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is a full length human cDNA of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1046 ATGATGATGAGATTGCGCAAAA 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ota T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-JUL-1999;
11-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-JUL-2000; 2000EP-0114089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; full length cDNA; cDNA synthesis; oligo-capping;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use in genetic manipulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wakamatsu A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP1130094-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human full-length cDNA, SEQ ID NO: 4157.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAK94923;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAK94923 standard; cDNA;
                                                                                                                                                                                                                                                                  Sequence 2954 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; AAM93956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HELI-) HELIX RES INST
 212
                                                                                                                                                 143
                                263
                                                                                        203
                                                                                                                    92
                                                                                                                                                                                                                       Local
                                                                                                                                                                              32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Primers useful for synthesizing full length cDNA clones
 CGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACC
                                                                                                                                                                           2001-524255/58.
                             CTCGGCACATCCTCACTGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCAGCTGA 322
                                            GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAAGAGCTGT 211
                                                                                       TGGGCAACTACCGCCTGCTGAGGACCATTGGGGAAGGGCAACTTTGCCAAAGTCAAGCTGG
                                                                                                                  GCTCACTGGGTGCCCGTTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCCACG 202
                                                                                                                                                                                                           473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8; SEQ ID NO 4157; 1380pp + sequence listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nishikawa T,
                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99JP-0194486.
2000JP-0118774.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000JP-0183765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sugiyama
                                                                                                                                                                                                                                                                620 A; 970 C; 868 G; 496 T; 0 other;
                                                                                                                                                                                                                      11.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isogai T, Hayashi K,
na T, Nagai K, Kojima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2954
                                                                                                                                                                                                         0
                                                                                                                                                                                                                      Score 264.2; DB 22; Length Pred. No. 1.2e-47;
                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                        348; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ishli S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hii S, Kawai Y;
Otsuki T, Koga
                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and their
                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ħ;
                                                                                       262
 271
                                                                                                                                                                                                        0;
```

밁

```
923
                                                                                                                  863
                                                                                                                                                                                                                                     803
                                                                                                                                                                                                                                                                                             692
                                                                                                                                                                                                                                                                                                                                                        743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        323
CTAAACGCTGTACTCTCGAGCAAATCATGAAAGACAAATGG
                               AAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCT 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATATTGTACACAGGGACCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCA 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCCCAGCAGCCTGCAGAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCCTAAACCACC
                                                                                                               CTTTCTACATGTCAACAGACTGTGAGAGCATCCTGCGGAGATTTTTGGTGCTGAACCCAG
                                                                                                                                                                       CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG 811
                                                                                                                                                                                                                                                                                                                                                                                                                GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCT 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGGGAGCCCCCCATATGCCGCCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCC 631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATTGCTGACTTTGGCTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCC 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAAGCTCGAGCCAAGTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAA 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTACGCAAGTGCTGGAGAAGTGTTTGACTACCTCGTGTCGCATGGCCGCATGAAGGAGA 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAACATCGTGAAGCTCTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTTGGTGATGG 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG 331
                                                                                                                                                                                                                                     TCGACGGCACAACCTCAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCC
                                                                                                                                                                                                                                                                                          TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACATGC 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAAGACTGACGCCCA 391
                                                                                                                                                                                                                                                                                                                                                        AGGTGGACATCTGGAGCCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382
                                                                                                                                                                                                                                                                                                                                                        802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 682
                                                                                                                  922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        742
```

밁

S B

Š

유

밁

```
RESULT 11
AAD18831
ID AAD18831 standard; cDNA; 3269 BP.
XX
AC AAD18831;
XX
DT 18-DEC-2001 (first entry)
XX
DE Human kinase (PKIN)-16 cDNA.
```

Human kinase; PKIN; gene therapy; adenocarcinoma; immune disorder; gout; cancer; allergy; sarcoma; leukaemia; acquired immune deficiency syndrome; AIDS; Addison's disease; microbial infection; inflammation; osteoporosis; atherosclerosis; cardiovascular disease; myocardial infarction; anaemia; myasthenia gravis; cirrhosis; cataract; growth and development disorder; seizure disorder; pulmonary embolism; Gaucher's disease; lipid disorder; lipid storage disease; plok's disease; Tay-Sachs disease; renal disease; obesity; restorative therapy; immunomodulatory; vaccine; cardiovascular; antimicrobial; cytostatic; antinflammatory; asthma; ss.

DE Human kinase (
XX

XX

Human kinase;
KW Human kinase;
KW cancer; allerg
KW AIDS; Addison
KW atherosclerosi
KW myasthenia gra
KW seizure disord
KW lipid storage
KW obesity; restc
KW obesity; restc
KW antimicrobial;
XX

Homo sapiens.
XX

KY

KY

KEY

FT

CDS

FT

CDS

Key Location/Qualifiers
CDS 17.275
/\*tag- a
/product= "Human PKIN-16 protein"

PN WO200181555-A2

05-MAY-2000; 11-MAY-2000;

20-APR-2000; 28-APR-2000;

18-MAY-2000; 26-MAY-2000;

```
PKIN may be used to treat disorders associated with decreased PKIN expression by rectifying mutations or deletions in a patient's genome that affect the activity of PKIN by expressing inactive proteins or to supplement the patients own production of PKIN PKIN nucleic acids may be used to produce the PKIN polypeptide, by inserting the nucleic acids into a host cell and culturing the cell to express the protein. PKIN nucleic acid and its complementary sequences may also be used as DNA probes in diagnostic assays to detect and quantitate the presence of similar nucleic acid sequences in samples and therefore which patients may be in need of restorative therapy. The present sequence is human PKIN-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acids encoding them. PKIN is used as vaccine and in gene therapy. PKIN is used in the prevention, diagnosis and treatment of diseases cancers, adenocarcinoma, leukaemia, sarcoma, immune disorder, Addison's disease, acquired immune deficiency syndrome (AIDS), anaemia, asthma, allergies, gout, microbial infections, cardiovascular disease and/or inflammation, myasthenia gravis, atherosclerosis, cirrhosis, osteoporosis, myocardial infarction, cataract, growth and development disorder, seizure disorder, pulmonary embolism, Gaucher's disease, lipid disorder, lipid storage disease, Pick's disease, Tay-Sachs disease, renal disease and obesity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3269 BP; 713 A; 1042 C; 939 G; 575 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 5; Page 163-164; 166pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yue H, Gandhi AR, Tribouley CM, Kearney L, Griffin JA, Nguyen DB;
Bandman O, Lu DAM, Lal P, Burford N, Khan FA, Walia NK, Yao MG;
Batterson C, Burrill JD, Marcus GA, Zingler KA, Recipon SA, Lu Y;
Policky JL, Thornton M, Tang YT, Hafalia A, Elliott VS, Baughn MR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (INCY-) INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         present invention relates to human kinases
                                                                                                                                                                                                                                                                                                               GCTCACTGGGTGCCCGTTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCCACG 182
                                                                                                                                                                                                                                                                                                                                                               CGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACC 271
                                                                                                     CTCGGCACATCCTCACTGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCCAGCTGA
                                                                                                                                                      GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                           TGGGCAACTACCGCCTGCTGAGGACCATTGGGAAAGGCCAACTTTGCCAAAGTCAAGCTGG
                                                                                                                                                                                                                                                            ATCCCAGCAGCCTGCAGAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCTAAACCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-200226P.
2000US-202339P.
2000US-203505P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-208795P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-205564P.
2000US-207739P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001WO-US12992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-199021P.
                                                                                                                                                                                                                                                                                                                                                                                                                                          11.3%;
57.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Borowsky ML, Au-young J, Hillman JL;
                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 264.2; DB 22; Length Pred. No. 1.3e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                               348; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (PKIN) and the nucleic nd in gene therapy. PKIN is
                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                  91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
ABA05739
ID ABA05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ζQ.
                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΩV
                                                                                                                                                                                                                                                                                                                                                                                                          cerebroprotective; neuroprotective; antiparkinsonian; immunosuppressive; virucide; anti-HIV; antiarthritic; antiinflammatory; antilicer; cancer; cerebral infarction; neurological disease; immunological disease; atopy; infection; leukaemia; polyarthritis; Crohn's disease; ulcerative colitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; neuronal serine threonine protein kinase; apoplexy;
17-MAY-2001; 2001WO-EP05660
                                                                                                                                                                              polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human neuronal serine threonine protein kinase 9B5 coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABA05739 standard;
                                                  22-NOV-2001.
                                                                                                   WO200188108-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        903 CTANACGCTGTACTCTCGAGCAAATCATGAAAGACAAATGG 943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGG 852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGGGAGCCCCCATATGCCGCCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATTGCTGACTTTGGCTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCT 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGACGGGCACAACCTCAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGGACATCTGGAGCCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATTGTACACAGGGACCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTACGCAAGTGCTGGAGAAGTGTTTGACTACCTCGTGTCGCATGGCCGCATGAAGGAGA 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCACGTCTCGGGGGGGGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGCCCA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAACATCGTGAAGCTCTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                /product= "h9B5"
3275..3280
/*tag= b
                                                                                                                                                                                                                                                      Location/Qualifiers 64..3280
                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA; 3312
                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           842
```

WPI; 2001-611740/70. P-PSDB; AAE11782.

Ramkumar J,

Ş 밁 δÃ 밁 Qy В δÃ

Query Match Best Local

Local Similarity

Conservative

123 92

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
S
                                     밁
                                                                     Ş
                                                                                                        밁
                                                                                                                                      Ş
                                                                                                                                                                             밁
                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        meuronal serine threonine protein kinases each from the mouse and human. These are designated 9B5 and 9B5_b. Detection of their expression levels can be used to diagnose the risk of apoplexy and in prognosis of cerebral infarction. They can also be used to identify agents useful in the prevention, treatment and diagnosis of neurological diseases, including stroke, multiple sclerosis, parkinson's disease, amyotrophic lateral sclerosis, tumours, especially carcinoma, immunological disorders, including autoimmune diseases, atopy, viral (including human immune deficiency virus) infections, acute or chronic leukocytic or myeloid leukaemia, primary chronic polyarthritis, Crohn's disease and ulcerative colitis. The present sequence is the human 9B5 coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rossner M, Elsenhardt G,
Jomana Naim S, Schupper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New polynucleotide, useful for the diagnosis, treatment and prevention of e.g. apoplexy, tumors and autoimmune disease, comprises a polynucleotide encoding the neuronal protein kinase -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3312 BP; 710 A; 1071 C; 954 G; 577 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention provides the protein and coding sequences of two neuronal serine thronine protein kinases each from the mouse and human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BADI ) BASF-LYNX BIOSCIENCE AG
   572
                                                                                                                                            452
                                                                                                                                                                                                                                                    470
                                                                                                                                                                                                                                                                                                                           410
                                                                                                                                                                                                                                                                                                                                                             272
                                                                                                                                                                                                                                                                                                                                                                                                 350
                                                                                                                                                                                                                                                                                                                                                                                                                                    212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                               ATCCCAGCAGCCTGCAGAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCTAAACCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCC
                                                                     GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                      ATATTGTACACAGGGACCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCA 649
                                                                                                                                          CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCC
                                                                                                                                                                                                  AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTCTGCGCTGGACTTCTGCCACAGCTACT
                                                                                                                                                                                                                                                  AGTACGCAAGTGCTGGAGAAGTGTTTGACTACCTCGTGTCGCATGGCCGCATGAAGGAGA
                                                                                                                                                                                                                                                                                      AGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAAGACTGACGCCCA 391
                                                                                                                                                                                                                                                                                                                        CCAACATCGTGAAGCTCTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGG
                                                                                                                                                                                                                                                                                                                                                             CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACC 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCGGCACATCCTCACTGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCCAGCTGA 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGGCAACTACCGCCTGCTGAGGACCATTGGGAAGGGCAACTTTGCCAAAGTCAAGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCACTGGGTGCCCGTTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCCACG 229
                                   AGATTGCTGACTTTGGCTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCT
                                                                                                                                                                           AGGAAGCTCGAGCCAAGTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAA 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54-55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Schwaninger M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.3%;
57.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75pp; German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , Fischer
Kuner R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 264.2; DB 24; Pred. No. 1.3e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches 348; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A, ...
Trutzel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Newrzella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kammandel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Goetz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , в;
В;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
631
                                                                     571
                                                                                                                                                                                                                                                                                                                                                             331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91
                                                                                                                                                                                                                                                  529
                                                                                                                                                                                                                                                                                                                         469
                                                                                                                                                                                                                                                                                                                                                                                                 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
RESULT 13
ABA05740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
XGCCXXXXPPPX
                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cerebroprotective; neuroprotective; antiparkinsonian; immunosupprovirucide; anti-HIV; antiarthritic; antiinflammatory; antiulcer; corepbral infarction; neurological disease; immunological disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABA05740 standard;
                                                                       Claim 1; Page 55-56; 75pp; German.
                                                                                                  New polynucleotide, useful for the diagnosis, treatment and prevention of e.g. apoplexy, tumors and autoimmune disease, comprises a polynucleotide encoding the neuronal protein kinase -
                                                                                                                                                                                                                                      Schneider A,
                                                                                                                                                                                                                                                                                                    17-MAY-2000; 2000DE-1024171.
                                                                                                                                                                                                                                                                                                                                  17-MAY-2001; 2001WO-EP05660
                                                                                                                                                                                                                                                                                                                                                                   22-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                         polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; neuronal serine threonine protein kinase; apoplexy; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human neuronal serine threonine protein kinase 9B5_b coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABA05740;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                h9B5_b; ss.
                                                                                                                                                                                                             Jomana
                                                                                                                                                                                                                             Rossner M,
                                                                                                                                                                                                                                                                                                                                                                                                WO200188108-A1
                                                                                                                                                                                                                                                                        BADI ) BASF-LYNX BIOSCIENCE AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nfection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             950 CTAAACGCTGTACTCTCGAGCAAATCATGAAAGACAAATGG
                                                                                                                                                                 2002-055696/07.
DB; ABB04434.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGGGAGCCCCCCATATGCCGCCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGTGGACATCTGGAGCCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGGCTCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTTCTACATGTCAACAGACTGTGAGAGCATCCTGCGGAGATTTTTGGTGCTGAACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGACGGGCACAACCTCAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGC
                                                                                                                                                                                                             Naim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                leukaemia; polyarthritis; Crohn's disease; ulcerative colitis
                                                                                                                                                                                                            Eisenhardt G,
S, Schwaning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                  Klaussner B, Fis....
Findt G, Kuner R,
                                                                                                                                                                                                                                                                                                                                                                                                              64.....
/*tag= a
/product= "h9B5"
3355,.3360
'4+ag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers 64..2130
                                                                                                                                                                                                             Schwaninger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA; 3392
                                                                                                                                                                                                                          A, Newrzella D,
Trutzel A, Kam
                                                                                                                                                                                                                             Kammandel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immunosuppressive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                889
```

The present invention provides the protein and coding sequences of two neuronal serine threonine protein kinases each from the mouse and human. These are designated 985 and 985\_b. Detection of their expression levels can be used to diagnose the risk of apoplexy and in prognosis of cerebra

Ş

밁

និងនិងនិងនិងនិង

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       including autoimmune diseases, atopy, viral (including human immune deficiency virus) infections, acute or chronic leukocytic or myeloid leukaemia, primary chronic polyarthritis, Crohn's disease and ulcerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 infarction. They can also be used to identify agents useful in the prevention, treatment and diagnosis of neurological diseases, includ stroke, multiple sclerosis, parkinson's disease, amyotrophic lateral sclerosis, tumours, especially carcinoma, immunological disorders,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3392 BP; 726 A; 1099 C; 972 G; 595 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            152 GGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                            AAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGG 852
                                                           CTAAACGCTGTACTCTCGAGCAAATCATGAAAGACAAATGG
                                                                                                                                                                                                                   CCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATCGAAGTGGAGCCCG
                                                                                                                                                                                                                                                                                                                    TTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGGCGTCTTCCACATGC
                                                                                                                                                                                                                                                                                                                                                                       AGGTGGACATCTGGAGCCTGGGAGTCATCCTGTACACCCTCGTCAGCGGCTCCCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAAACAACATCC
                                                                                                                                                               CTTTCTACATGTCAACAGACTGTGAGAGCATCCTGCGGAGATTTTTGGTGCTGAACCCAG
                                                                                                                                                                                                                                                                         TCGACGGCACAACCTCAAGGAGCTGCGGGAGCGAGTACTCAGAGGGAAGTACCGGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                        GGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGGAGCCCCCATATGCCGCCCCGGAGCTGTTTCAGGGCAAGAAGTACGACGGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATTGCTGACTTTGGCTTCAGCAACGAGTTCACGCTGGGATCGAAGCTGGACACGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAACATCGTGAAGCTCTTTGAGGTGATTGAGACTGAGAAGACGCTGTACCTGGTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATTGTACACAGGGACCTGAAGGCTGAGAACCTCTTGCTGGATGCCGAGGCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAAGCTCGAGCCAAGTTCCGACAGATTGTTTCGGCTGTGCACTATTGTCACCAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCACAGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTACGCAAGTGCTGGAGAAGTGTTTGACTACCTCGTGTCGCATGGCCGCATGAAGGAGA.529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCCCAGCAGCAGAAGCTGTTCCGAGAAGTCCGCATCATGAAGGGCCTAAACCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCGGCACATCCTCACTGGTCGGGAGGTTGCCATCAAGATTATCGACAAAACCCCAGCTGA 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTCACTGGGTGCCCGTTGCCGGAACTCCATCGCCTCCTGTCCCGAGGAGCAGCCCCCACG 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGCAACTACCGCCTGCTGAGGACCATTGGGAAGGGCAACTTTGCCAAAGTCAAGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence is the human 9B5_b coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11.3%;
57.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 264.2; DB 24; Pred. No. 1.3e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          348; Indels
                                                           990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                               949
                                                                                                                                                                                                                811
                                                                                                                                                                                                                                                                      889
                                                                                                                                                                                                                                                                                                                                                                          829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , _
Ş
                                                        밁
                                                                                                      Q
                                                                                                                                                          뭥
                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                 Query Match
```

밁 S 밁 Š 밁 Ş В δã В δõ 밁 Š 밁 ő 밁 Š 밁 δÃ 밁 Ş В Š 밁 Š 밁 Š

RESULT 14

209 140 149 80 89

TGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC

268

TGGCTCGGCATATCCTCACGGGCCGGGAGGTCGCTATTAAGATCATTGATAAGACCCAGC 199 TCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGC 208 ATGTGGGCAACTATAGGCTGCTAAGGACCATCGGGAAGGGCAACTTCGCCAAAGTCAAGC 139  Local

Similarity

11.2%; 58.9%;

Score 261.6; Pred. No. 3.9

.9e-47; DB 22; 314;

450;

Conservative

0,:

Mismatches

Indels

0

Gaps

0

Length 1594;

```
complementary sequences may also be used as DNA probes in diagnostic assays. The kinase polypeptides may be used as antigens in the production of antibodies of kinase expression and activity. Anti-kinase antibodies and kinase antagonists may also be used to down regulate kinase expression and activity. Diseases related to kinase expression and activity. Diseases related to kinase expression and activity include rheumatoid arthritis, atherosclerosis, autoimmune disorders, complications of organ transplantation, myocardial infarction, oxidative-stress related disorders, chronic inflammatory bowel disease, chronic inflammatory pelvic disease, multiple sclerosis, asthma, osteoarthritis, psoriasis, rhinitis, autoimmunity, diabetes, cancers and
                                                                                                                                                                                                                                               The present sequence encodes a novel protein kinase. The nucleic acids and the protein kinases they encode may be used in the treatment and diagnosis of diseases associated with inappropriate kinase expression such as immune-related diseases and disorders, cardiovascular disease, neurodegenerative diseases and/or cancers. The nucleic acids and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; mouse; protein kinase; antiarthritic; antisclerotic; oste immunosuppressive; cardiant; renal; antinfiammatory; antiasthma dermatological; antidiabetic; antiinfertility; gene therapy; vac immune disorder; cardiovascular disease; neurodegenerative disease; cancer; autoimmune disorder; stroke; inflammatory bowel disease;
                                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig 2;
                                                                                                                                                                                                                                                                                                                                                                                                                 Nucleic acids encoding kinase polypeptides, useful for diagnosing and treating immune-related diseases and disorders, cardiovascular disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plowman GD, Martinez
                                       reproductive disorders.
                                                                                                                                                                                                                                                                                                                                                                                                   neurodegenerative diseases and/or cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-MAY-2000; 2000WO-US14842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200073469-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAF44655 standard; cDNA; 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SUGE-) SUGEN INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inflammatory pelvic disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel protein kinase cDNA, SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-032161/04.
     1594 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0136503
   376 A; 488
                                                                                                                                                                                                                                                                                                                                                              310pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                æ
                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Whyte D,
   C; 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  multiple sclerosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ID NO:
   ů
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sudersanam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35
272 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antiasthmatic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       osteopathic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vaccine;
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                            Mus
                                                                                                                                                                                                                                                  cerebroprotective; neuroprotective; antiparkinsonian; immunosuppressive; virucide; anti-HIV; antiarthritic; antiinflammatory; antiulcer; cancer; cerebral infarction; neurological disease; immunological disease; atopy;
                                                                                            polyA_signal
                                                                                                                                                                                                                                                                                                  Mouse; neuronal serine threonine protein kinase; apoplexy; cytostatic;
                                                                                                                                                                                                                                                                                                                                   Murine neuronal serine threonine protein kinase 9B5 coding sequence
                                                                                                                                                                                                                                                                                                                                                                       04-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                        ABA05737 standard; cDNA; 3170 BP
                                              WO200188108-A1
                                                                                                                                                                                                                                      infection; leukaemia; polyarthritis; Crohn's disease; ulcerative colitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                            musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAAACATCCTTGG 852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAAACGGGGCGTCTTCCACA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGAGGTGGACATCTGGAGCCTGGGTCATCCTGTACACGCTGGTCAGCGGCTCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTCCGCCTGGACTTCTGCCACAGCT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGCAAAACGCTGTACTCTGGAGCAAATCATGAAAGACAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTCGATGGGCACAACCTCAAGGAGCTGCGGGAGCGAGTCCTCAGAGGAAAGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTGGTGGGGGCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGTGGGAGCCCCCATACGCCGCCCCAGAGCTGTTCCAGGGCAAGAAGTATGATGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAAAATCGCCGACTTCGGCTTCAGCAATGAGTTCACGCTGGGCTCCAAGCTGGACACCT 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAGGAGGCTCGAGCCAAGTTCCGGCAGATCGTGTCAGCCGTGCACTACTGTCATCAGA 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGAATACGCTAGCGCAGGAGAAGTGTTTGACTACCTCGTGTCGCACGGCCGCATGAAGG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGC 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCCCTTCTACATGTCTACAGACTGCGAGAGCATTCTGCGGAGATTTCTGGTGCTGAACC 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAACATTGTACACAGGGATCTAAAGGCTGAAAACCTGTTGCTGGATGCCGAGGCCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCCCAACATCGTGAAGCTTTTTGAGGTGATAGAGACGGAGAAGACGCTATACCTGGTGA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAACCCCAGTAGCTTGCAGAAGCTGTTCAGAGAAGTCCGAATTATGAAGGGACTCAACC
                                                                                     /product= "
                                                                                                                                          Location/Qualifiers
1..2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 628
                                                                                                                                                                           . -
```

22-NOV-2001

619

```
δõ
                                                                           밁
                                                                                                           Ş
                                                                                                                                                 밁
                                                                                                                                                                                 Š
                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention provides the protein and coding sequences of two neuronal serine threonine protein kinases each from the mouse and human. These are designated 9B5 and 9B5_b. Detection of their expression levels can be used to diagnose the risk of apoplexy and in prognosis of cerebral infarction. They can also be used to identify agents useful in the prevention, treatment and diagnosis of neurological diseases, including stroke, multiple sclerosis, Parkinson's disease, amyotrophic lateral sclerosis, tumours, especially carcinoma, immunological disorders, including autoimmune diseases, actopy, viral (including human immune deficiency virus) infections, acute or chronic leukocytic or myeloid leukaemia, primary chronic polyarthritis, Crohn's disease and ulcerative colitis. The present sequence is the murine 9B5 coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3170 BP; 714 A; 988 C; 897 G; 571 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 52-53; 75pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of e.g. apoplexy, tumors and autoimmune disease, comprises polynucleotide encoding the neuronal protein kinase -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New polynucleotide, useful for the diagnosis, treatment and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jomana Naim S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schneider A,
     560
                                     569 GCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAATATGATGGCC
                                                                                                                                                 440
                                                                                                                                                                                                                       380
                                                                                                                                                                                                                                                         389
                                                                                                                                                                                                                                                                                           320
                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                   260
                                                                                                                                                                                                                                                                                                                                                                                                   269
                                                                                                                                                                                                                                                                                                                                                                                                                                       200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BADI ) BASF-LYNX BIOSCIENCE AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGC 208
TCTGTGGGAGCCCCCATACGCCGCCCCAGAGCTGTTCCAGGGCAAGAAGTATGATGGGC
                                                                                                         TCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCA
                                                                                                                                           AGAACATTGTACACAGGGATCTAAAGGCTGAAAACCTGTTGCTGGATGCCGAGGCCAACA
                                                                                                                                                                                                                 AGAAGGAGGCTCGAGCCAAGTTGCGGCAGATCGTGTCAGCCGTGCACTACTGTCATCAGA
                                                                                                                                                                                                                                                   CCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCCTGGACTTCTGCCACAGCT
                                                                                                                                                                                                                                                                                                                         TGGAGCACGTCTCGGGGGGGGAGCTATTCGACTACCTGGTAAAGAAGGGGGAGACTGACGC
                                                                                                                                                                                                                                                                                                                                                                                               ACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTGGGCAACTATAGGCTGCTAAGGACCATCGGGAAGGGCAACTTCGCCAAAGTCAAGC 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2002-055696/07.
                                                                         TCAAAATCGCCGACTTCGGCTTCAGCAATGAGTTCACGCTGGGCTCCAAGCTGGACACCT
                                                                                                                                                                              ACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACA
                                                                                                                                                                                                                                                                                         TGGAATACGCTAGCGCAGGAGAAGTGTTTGACTACCTCGTGTCGCACGGCCGCATGAAGG
                                                                                                                                                                                                                                                                                                                                                             ACCCCAACATCGTGAAGCTTTTTGAGGTGATAGAGACGGAGAAGACGCTATACCTGGTGA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAACCCCAGTAGCTTGCAGAAGCTGTTCAGAGAAGTCCGAATTATGAAGGGACTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAGCTCATCGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCTCGGCATATCCTCACGGGCCGGGAGGTCGCTATTAAGATCATTGATAAGACCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           467;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , Klaussner B, Fischer Eisenhardt G, Kuner R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000DE-1024171,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001WO-EP05660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schwaninger M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11.18; 57.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fischer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 259.4; DB 24; Pred. No. 1.4e-46; 0; Mismatches 346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A, Newrzella
Trutzel A, K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kammandel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goetz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          prevention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                     628
                                                                       559
                                                                                                         568
                                                                                                                                           499
                                                                                                                                                                               508
                                                                                                                                                                                                                                                   448
                                                                                                                                                                                                                                                                                       379
                                                                                                                                                                                                                                                                                                                         388
                                                                                                                                                                                                                                                                                                                                                                                                 328
                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       268
```

Search completed: April 21, 2003, 20:31:33 Job.time: 337.629 secs

. . . .

GenCore version 5.1.4\_p5\_4578 Copyright (c) 1993 - 2003 Compugen Ltd.

OM nucleic nucleic search, using sw model

Run on: April 21, 2003, 19:25:40; Search time 3982.82 Seconds (without alignments) 17054.732 Million cell updates/sec

Title: Perfect score: US-10-003-690-3 2334

Sequence: 1 atgtcgtccggggccaagga.....ccaacgggacccctctgccc 2334

7.

Scoring table: IDENTITY\_NUC Gapop 10.0 , Gapext 1.0

2054640 seqs, 14551402878 residues

Total number of hits satisfying chosen parameters: 4109280

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100% Listing first 45 summaries

Database : GenEmbl:\* gb\_htg:\* gb\_om:\* gb\_in:\* jb\_ov:\*

gb\_pat:\*
gb\_ph:\*
gb\_p1:\* em\_fun:\*
em\_hum:\*
em\_in:\* gb\_pr:\* em\_pat:\* em\_ph:\* em\_pl:\* em\_om:\*
em\_ov:\* gb\_vi:\*
em\_ba:\* gb\_sy:\* gb\_ro:\* em\_mu:\*

Pred. No. is the number of results predicted by chance to have D

em\_htgo\_mus:\*
em\_htgo\_other:\* em\_sy:\* em\_htgo\_hum:\*

em\_htg\_pln:\*
em\_htg\_rod:\*
em\_htg\_mam:\*
em\_htg\_vrt:\*

em\_htg\_inv:\*
em\_htg\_other:\*

em\_htg\_mus:\*

em\_sts:\*
em\_un:\*

em\_ro:\*

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

40	4.	4	) (	) H	- c					36					) (	2 6	) (	) N	J I	) i	2 1	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	ψ	. 00	7	6	. UT		· w	N			No.	1
221.4	224.2	) N U . #	) N U U . 4	n -	10	0 0	7	8	٥.		0	C	۰.	4	2 4 0	, (	י	л с О Н	2 :	264.2		54	64.	64.	65.	65	296.8	97			37		73	Ë	4	491.8	538	$\vdash$	961	G	1470.6	14	2223	25	N	$\mathfrak{S}$	-	Score	
9.5	, 1 o		9.7			•		10.2	10.3	10.3	10.3	10.3	10.3	10.0		, <sub>-</sub>	11.1	11.2	1 .	11.0	11:0	11.3	11.3	11.3	11.4	11.4	12.7	13.2	13.5	13.5	15.9	15.9	16.0	6	19.1	21.1	23.1	35.0		41.2	ω	91.9	5	6	96.7	100.0		Match	3
2352	4498	6077	2000	1001	1030	2762	1749	2572	2946	2701	2222	2112	2112	4092	2000	3 4 5 5	0 C	3170	1504	4917	2000	3312	3226	2462	3609	3529	2333	1873	$\circ$	26	347	8	5609		3933	3156	1014	1956	2219	2025	2128	2576	2720	8	2385	10	1	Length	
σ	Ţ	, a	o	<b>5</b> C	ے ہ	<u>,</u>	إد	10	φ	9	σ	ø	σ	٦,		, 0	۱ ۵	n c	א ע	0 0	א ע	ת	9	σ	φ	9	9	9	N	Ν	9	9	w	ω	w	9	9	9	6	σ	ي ا	9	9	9	σ	9	1	BB	
AX262512	14		ATSALNA	AF LOLOWY	•	TAKEN OF COLO	AE020310	RNMARK2	HSSTPKEMK	BC008771	AX375131	AF387638	AX375128	993	ABUZU48U	AX3U51U4	AAGGEOG	AAV30390	00	7 1	NY305106	AX305105	44	AX399987	AB049127	AB088047	8	9	AC125948	AC079583	AC020922	7	AY060288	4	AB014885	AK074411	HSM803233	HSA6701	AX327993	AX327995	BC016681	AB058714	HSM805307	AF479826	N	82		Ħ	
AX262512 Sequence	1494	AYU931/U Arabidops	o/ A.thallana	. 4	0/64 M	1 0	20210	RAG R norved	30 H.sapi		AX375131 Sequence		AX375128 Sequence	AF106937 Rattus no	0 Kattus	'n	oros sequenc		000	63 Homo dan		105 5000	7448	987 Seque	7 Homo	7 Homo	20089 ното	24291 Homo s	125948 Ratt	9583 Mus m	22 Homo	4		2 Caenorha	4885 Haloc	11 Homo	31945 Homo	2	993	ന	81 Homo	58714 Homo	75 Homo	26 H	AX166526 Sequence			Description	

## ALIGNMENTS

KEYWORDS SOURCE ORGANISM RESULT 1
AF479827
LOCUS
DEFINITION
ACCESSION
VERSION REFERENCE AUTHORS TITLE JOURNAL

Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 3109)
She, X.Y., Yu, L. and Guo, J.H.
Direct Submission 3109 bp mRNA linear PRI 12-MAR-2002 Homo sapiens protein kinase-like protein mRNA, complete cds. AF479827 AF479827.1 Homo sapiens. GI:19401873

Submitted (02-FEB-2002) School of Life Sciences, Laboratory of

	,							•		;	<del>.</del>	AGAP	PPGS SPRF KADI RDGS	RLSL DRER RHGK	GKGQ VYEN LKPE			220
,																	-	
							· t											
-			:				f											
Qy	Db Qy	Db Qy	Дy	Db Qy	рь	ру	Db dq	Фр	дь 64	Оу	pb Qy	Дb	ОУ	Дb	Оу	ОУ	ф	Db Qy
1681	1621 1898	1561 1838	1501 1778	1441 1718	1381 1658	1321 1598	1261 . 1538	1201 1478	1141 1418	1081 1358	1021 1298	961 1238	901 1178	841 1118	781 1058	721 998	661 938	601 878
CTGGGCTCCCCTCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCC 1	GGCGGTGGCGTCGGGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTC 1	CTGCACACGCCCCGGGCCAGTCCCACCGGGACCCCGGGGACAACACCACCCCCCAGCCCC 1	CCCCTGCCCGGCCCCCAGGCTCCCCGCGCTCCTCTGGGGGGACCCCCTTGCACTCGCCT 1	CGGGGCCCCAGGGGTGGGGGGCGCCGGGGAGCAGCCCCCCCC	GCTGGAGATGAGGCTCGAGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCT 1	TCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGG 13 	TTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTG 13	GAAGTCCTGAGCATCACCGATGCCGGGGGGGGGGGCTCCCCTGTACCCACCGACGGGCC 1	CGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATG 1:	TATCCCAGCTGTGAGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAG 1:	AGTGAGGAGGAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGG 10 	GAGAGCATGGCATCACTGGGCTGCCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGC 1	GCCGCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTA 9	AAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGCAGCCAGC	CTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAG 8	GAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGC 7:	CTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTG 7.	GTGATTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATC 6
740	.680	620 897	.560	500	1440 1717	.657	1320 1597	.260	.477	1140 1417	1080 1357	1020 1297	960 1237	900 1177	840 1117	780 1057	720 997	60 37

Qy 5 Db 8	Qy 4 Db 7	Qy 4 Db 6	ΟΥ 3 Db 6	Qу 3 рь 5	Qy 2 Db 5	Qy 1 Db 4	Qу 1 рь з	Qy Db 3	Оу Въ 2	Query Best Match	BASE CO	CĐ	FEATURE SO
							121 GGCAAAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTC			Query Match 100.0%; Score 2334; DB 9; Length 3109; Best Local Similarity 100.0%; Pred. No. 0; Matches 2334; Conservative 0; Mismatches 0; Indels 0; Ga	/protein_io="align: color: protein" /protein_io="align: color: protein" /protein_io="align: color: protein" /protein_io="align: color: protein" /db_xref="gi:19401874" /translation="MSSGAKEGGGSPAYHLPHPHPHPPQHAQYVGPYRLEKTLGKGQ /translation="MSSGAKEGGGSPAYHLPHPHPHPPQHAQYVGPYRLEKTLGKGQ TELVKLGVHCTTGQKYAIKITVRREKLSEKSETRGYTGALLEKTLGCHSYSICHRDLKPE RKYLYLVLEHVSGGELFDYLVKKGRLTFREARKFFRQIVSALDECHSYSICHRDLKPE RILLUGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSL EQIQKHEWYLGGKHEPDDCLEARAFRGVFMNDVDDPRKTVDSPMLSGGFRDRER LHRELRSEENGKMIYYLLDRKERYPSCEDQDLPRRUDVDDPRKTVDSPMLSRHGK RRPEKKMEVLSITDAGGGGSPYBTRRALEMAQHSQRSRSVSGASTGLESSPLSSPRS PFSESPERAGDEARAGGGSPYBTGTTPTPSPGGGAGEQPPPPSARSTPLFQFPGS PRSESPERAGDEARAGGSFTSTGTTFTTSPGGAAMRSRLNSIRNSFLLSGPRF RRKMQYPTAEEMSSLTPESSPELAKRSNFGNFISLDKEEQIFTVLKDKRLSIKADI VHAFLSIPSLSHSVLSGTSFRREYKASGGPSVPGKFVERQVDISSSEGPEPSPREDGS GGGIYSVTFTLLSGPSRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAP PRSLQPPPGRDPDELSSSPREKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAP PRSLQPPPGRDPDELSSSPREKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAP PRSLQPPPGRDPDELSSSPREKRVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAP PRSLQPPPGRDPDELSSSPREKRVETIQAGLTNGTPLP"  611 a 1033 c 957 g 508 t	DS	Handan Road, Shanghai 200433, P. ES Location/Qualifiers ource 1, 3109
600 877	540 817	480 757	420 697 .	360 637	300 577	240 517	180 457	120 397	60 337	ıps O;	IKTLGKGG HLHDVYEN ALDMWSCG SPEKRLSI SPLSSPRS F		

186

: 438

486

426 378 318 306

258

366

498

546

```
RESULT 2
AX166526
                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              닭
  ş
                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                 FOCUS
                                                                                              BASE
                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                          KEYWORDS
                           Query Match
Best Local S
Matches 2256
                                                                                                                                                                                     TITLE
                                                                                                                                                                        JOURNAL
                                                                                           COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1801
                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1958
                                       Local Similarity
     79
                                                                                                                                                                                                                                                                                                                                                                                                            CGAGGCCCCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGT 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCC
                              2256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCGTGCAGGCCCTGGCAGAGAGAACGAGACCCAGACCCGGCCTGCTGCTGCTGCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCA 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCCGAAGCCTGCAGCCCCACCCGGCCCCAGACCCCAGAGCTGAGCAGCTCTCCCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCCGAAGCCTGCAGCCCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATC 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATC
                                                                                                                                                                                                                                                                                                      AX166526
Sequence 17
AX166526
AX166526.1
                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 2385)
Plowman,G.D., Whyte,D., Manning,G.S., Sudarsanam,S.S., Martinez,R Flanagan,P. and Clary,D.S.

Novel human protein kinases and protein kinase-like enzymes Patent; WO 0138503-A 17 31-MAY-2001;
                                                                                                                                                         Sugen,
                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          494
                            Conservative
                                                                                             ø
                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
768 c 731 g 39
                                                                                                                                                                                                                                                                                                                                  17 from
                                                                                                                                             Location/Qualifiers
                                                                                                                                  .2385
                                                                                                                                                             (BS)
                       96.7%; oc.
100.0%; pr
0;
                                                                                                                                                                                                                                                                                                         GI:14546871
                                                                                                                                                                                                                                                                                                                                2385 bp
Patent WO0138503.
                          Score 2256; D; Pred. No. 0; 0; Mismatches
                                                                                             392
                                                                                             +
                                                      В
                                                                                                                                                                                                                                                                                                                                              DNA
                                                     6
                                                                                                                                                                                                            Sudarsanam, S.S., Martinez, R.,
                            0;
                                                    Length 2385;
                            Indels
                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                       2334
                                                                                                                                                                                                                                                                                                                                                                                                               2611
                            0;
                                                                                                                                                                                                                                                                                                                                              22-JUN-2001
                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2557
                            <u>.</u>
                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρy
             õ
                                       밁
                                                             Š
                                                                                         밁
                                                                                                                 Š
                                                                                                                                                                     Qy
                                                                                                                                                                                               망
                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                    밁
               1159
                                                                                                                    1039
                                                                                                                                              1027
                                                                                                                                                                       979
                                                                                                                                                                                                 967
                                                                                                                                                                                                                          919
                                                                                                                                                                                                                                                    907
                                                                                                                                                                                                                                                                           859
                                                                                                                                                                                                                                                                                                     847
                                                                                                                                                                                                                                                                                                                               799
                                                                                                                                                                                                                                                                                                                                                         787
                                                                                                                                                                                                                                                                                                                                                                                   739
                                                                                                                                                                                                                                                                                                                                                                                                             727
                                                                                                                                                                                                                                                                                                                                                                                                                                       679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             127
                                                                                       GAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC
                                                                                                                                                                                                                                                               CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCCGGAAGCGTGTGGATTCTCCCATG
                                                     CAGGACCTGCCTCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCATG
                                                                                                                                           CGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTG 978
                                                                                                                                                                                                                                                                                                     GAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA
                                                                                                                                                                                                                                                                                                                   GAAGTIGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA
                                                                                                                                                                                                                                                                                                                                                        GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC
                                                                                                                                                                                                                                                                                                                                                                       GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC
                                                                                                                                                                                                                                                                                                                                                                                                             GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAAGGTGAAACGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTCTGCGCTGGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG
                                                                                                                                                         GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAA 1038
                                                                                                                                                                                                                                                  GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCGGGTAGCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGACTGACGCCCAAGGACGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTC
```

678

726

618

909 558

666

1086

1026

1206 1158 1146 1098

1218

858

846 798 786

```
2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . :
                                                                                                                                                      :
                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
        В
                         Š
                                             밁
                                                             Qγ
                                                                                  밁
                                                                                                   δÃ
                                                                                                                         밁
                                                                                                                                           Ş
                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF479826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                            Query Match
Best Local Similarity
Matches 2256; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2299
        434
                           259
                                              374
                                                                199
                                                                                   314
                                                                                                      139
                                                                                                                         254
                                                                                                                                            79
      AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC
                                                                                                                                          CGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
complete cds.
AF479826
AF479826.1 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (02-FEB-2002) School of Life Sciences, Laboratory of Human Genes Research, Institute of Genetics, Fudan University, Handan Road, Shanghai 200433, P. R. China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 3007)
She, X.Y., Guo, J.H. and Yu, L.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF479826
                                                                                                                                                                                                              636
                                                                                                                                                             96.7%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                              þ
                                                                                                                                                                                                            FIVJKKNEPLSSI KADIYHAFILSI PSILSHSVILSQTSFRAEYKASGGPSVFQKPVRFQVD
I SSSEGPEPSPRRDGSGGGGI TSVTFTIL TSGPSRRFKRVVET IQAQILLSTHDQPSVQA
LADEKNGAQTRRAGAPPRSIQPPGRPDPELSSSPRRGPPKDKKILATNGTPLP*
a 940 c 906 g 525 t
                                                                                                                                                                                                                                                                                                                                                                                              /tissue_
128. .25
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                              /map="19q13"
                                                                                                                                                                                                                                                                                                                                                                                                                        /chromosome="19"
                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:19401870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          putative
                                                                                                                                                                                                                                                                                                                                                                                           .2512
                                                                                                                                                               0,
                                                                                                                                                                       Score 2256;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3007 bp mRNi
serine/threonine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3007
                                                                                                                                                               Mismatches
                                                                                                                                                                                 BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                9;
                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein
                                                                                                                                                                                Length
                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRI 12-MAR-2002
                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA,
                                                                                                                                                             Gaps
                         318
                                                               258
                                                                                                                        313
       493
                                            433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  220
                                                                                                                                                             0;
```

```
2239
                                                                                               2179
                                                                                                                                                                2119
                                                                                                                                                                                               2107
                                                                                                                                                                                                                                                                                             1999
                                                                                                                                                                                                                                                                                                                            1987
                                                                                                                                                                                                                                                                                                                                                            1939
                                                                                                                                                                                                                                                                                                                                                                                            1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1207
                                                                                                                                                                                                                                                                                                                                                                                                                        1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1459
CCACCCGGCCGAGACCCAGAGCTGAGCAGCTCTCCCCGCGAGGCCCCCCCAAGGAC
                                                                              GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                                             GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                                                                       GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                     GCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCC 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCCACCCCGAAGCCTGCAGCCC
                                                                                                                              GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                              ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                            ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCCGCGGACGGGACGCGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACCGGCGAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC 1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTTGGGCTCCCCTCGCTTT 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGCCTGGAGATGAGGCTCGA 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC 1338
                                                                                                                                                                                            ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                             ATCAGCTCCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTT 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCCAGGGGTGGG 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCCGGGGGCCTGGAGATGAGGCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCAC 1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCAC 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC
                               2298
                                                                                             2238
                                                                                                                              2226
                                                                                                                                                                                                                            2118
                                                                                                                                                                                                                                                                                           2058
                                                                                                                                                                                                                                                                                                                                                         1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1386
                                                               2286
                                                                                                                                                                                            2166
                                                                                                                                                                                                                                                           2106
                                                                                                                                                                                                                                                                                                                           2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1266
```

밁 Ş 밁 δõ 밁 Š В Ş 밁 õ ₿ õ В γ 밁 ρ 밁 Š 밁 Š 밁 δÃ 용 δÃ 밁 Q 밁 δÃ 밁 Š 밁 δ 밁 Ş 밁 Qy 밁

1458	GGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCCAGGGGTGGG	1399	γQ
1573	CCAAGGAGTCCGGTCTTTTCCTTTTCACC	1514	ర్జ
1398	GCCCAAGGAGTCCGGCTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCG	1339	Qy
1513	AGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGC	1454	망
1338	CCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAG	N	Qy
(J		9	В
1278	ATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGC	1219	δ
1393	CTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACC	1334	뭕
1218	TGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC	1159	Qy
1333	CAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCATG	1274	밁
1158	AGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGGAAGCGTGTGGATTCTCCC	0	Qy
1098 1273	GAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGACGGTATCCCAGCTGTGAGGACGIIIIIIIIII	1039 1214	dd Ao
1213	CTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAAC	-	탕
1038	GCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGGAGCAA	979	Qy
	GGAGCCTGCCATCCAACGGAGACTGGACCCCGACGTCCTAGAGAGCATGGCATCACTG	9	밁
978	GGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACT	919	ρy
1093	GCGGGAAACACGAGCCCAGACCCGTGCCTGGAGCCAGCCCTGGCCGGCC	1034	뭥
918	GCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCAT	859	Qy
0		7	당
858 8	AAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT	799	QΨ
7 (	GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGGAATGATC	Ĕ,	B 2
οi	TCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTTCCTGAGGGGA		Q (
738 913	GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGCAGAAGGTGAAACGGGGC 	679 854	B 54
Ü	ATGATGGCCGCCGGCACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC	i v	5
7	TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTTCTTCGCCCTGCTCGTG	619	Ş Q
793	GAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAA		Ъ
618	TGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG	559	Qy
733	AAAAACAACCTCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTC		<u>Б</u>
558	AACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCT	499	Qy
673	TGCCACGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAG	614	뭥
498	GCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGAT		Q.
438 613	AGACTGACGCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTGTG	379 554	D Q
Ū	CCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGC		6
1 7	TACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGAG	, i	ş 2

Homo sapiens

```
RESULT 4
HSM805307
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                            밁
                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                  밁
                                                                                                                                                                   δõ
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                     F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮹
                                                                                                                              2299
                                                                                                                                                  2414
                                                                                                                                                                                                                                                                                                             2174
                                                                                                                                                                                                                                                                                                                                 1999
                                                                                                                                                                                                                                                                                                                                                    2114
                                                                                                                                                                                                                                                                                                                                                                       1939
                                                                                                                                                                                                                                                                                                                                                                                                                                 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1574
                                                                                                            2474
                                                                                                                                                                      2239
                                                                                                                                                                                          2354
                                                                                                                                                                                                           2179
                                                                                                                                                                                                                                2294
                                                                                                                                                                                                                                                                     2234
                                                                                                                                                                                                                                                                                          2059
                                                                                                                                                                                                                                                                                                                                                                                           2054
                                                                                                                                                                                                                                                                                                                                                                                                               1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC 2334
                                                                                                                                                 GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTTGGCA
                                                                                                                                                                                                                                                                                 ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                                      ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                  GAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                         GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTT 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCTCCCCGCGCTCTCGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCTCCCCCGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCCGGGCC
                                                                                                                                                                     CCACCCGGCCGAGACCCAGAGCTGAGCAGCTCTCCCCGCGAGGCCCCCCCAAGGAC
                                                                                                                                                                                                                                GAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCA
                                                                                                                                                                                                                                                                     ATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTG
                                                                                                                                                                                                                                                                                                            ATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens r
AL834275
AL834275.1 G
                                                           HSM805307
                              GI:21739846
                                               2720 bp mRNA 1 mRNA; cDNA DKFZp547E1613 (from
                                               linear PRI 12-JUL-2002
m clone DKFZp547E1613).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1633
                                                                                                                                                                                                                                                  2178
                                                                                                                                                                                                                                                                                                                                                                                                            1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1578
                                                                                                                                                  2473
                                                                                                                                                                                                                                2353
                                                                                                                                                                                                                                                                     2293
                                                                                                                                                                                                                                                                                         2118
                                                                                                                                                                                                                                                                                                                                 2058
                                                                                                                                                                                                                                                                                                                                                   2173
                                                                                                                                                                                                                                                                                                                                                                       1998
                                                                                                                                                                                                                                                                                                                                                                                           2113
                                                                                                                                                                                                                                                                                                                                                                                                                                 2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1933
                                                                                                                                                                      2298
                                                                                                                                                                                        2413
                                                                                                                                                                                                           2238
                                                                                                                                                                                                                                                                                                             2233
```

Qy Db

Дb

B 8

0y 0y

Q

```
밁
                                                                       δ.
                                                                                                                                                          В
                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                           γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 2234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                       161
                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCT 340
                                                                                                                                                                                                                                                                                                        GCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGG
                                                                                                                                                                                                                                                                                                                                                                                   GCATCACGGGTCAGAAGGTCGCCATCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (09-JUL-2002) 1, D-85764 Neuherberg, Gekmant Submitted (09-JUL-2002) 1, D-85764 Neuherberg, Gekmant Cancellone from S. Wiemann, Molecular Genome Analysis, German Cancellone from S. Wiemann, Wiemann, Wiemann, Molecular Genome Analysis, German Cancellone from S. Wiemann, Wiemann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This clone (DKFZp547E1613) is available at the RZPD in Berlin. Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059 Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de Further information about the clone and the sequencing project is available at http://mips.gsf.de/proj/cDNA/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Koehrer, K., Beyer, A., Mewes, H.W., Weil, B. and Wiemann, S. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 2720)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FIPPDCQSLLRGMIEVEPEKKLSLEQIOKHPWYLGGKHEPDDCLEPAPGRRYAMRSLP
SNGELDPDVLESMASLGCFBDRERLHRELRSEERQEKMIYLLLDRKERK PSCEDQD
LPPRNDVDPPKKRVDSPMLSRHGKRRPERKSMEVLS TIDAGGGGSPYDTRRALEMAQH
SQRSRSVSGASTGLLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPYSKTQTLLPSRGPR
GGGAGEQPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTTPPPSPGG
GGGAGEQPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTTPPPSPGG
GVGGAAWRSRLNSI RNSFLGSPRFHRKMQVPTAEEMSSLTPESSSPELAKRSWFGNFI
SLDKEEQIFLVLKUKPLSSI KADIVUAPFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQ
KPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVFTLI SGPSRFFKRVVETIOAQLLST
HDQPSVQALADEKNGAQTERPAGAPPRGGIPPFGRPDPELSSSPRRGPPQGQEAPGHQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="DKFZp547E1613"
879 c 807 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DPSALTPRGRGGRGPPSTPLPCPPTVNL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="rlektlgkgqtglvklgvhcitgqkvaikivnreklsesvlmkv
EREIAIKLIEHEHVLKLHDVENKKYLTVLHVSGGELEDLJVKKGRLTPKEARKF
ERQIVSALDFCHSYSTCHRDLKPENLLLDEKNHIRIADEGELEDLJVKKGRLTPKEARKF
HYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="DKFZp547E1613"
/tissue_type="brain"
/clone_libye="547 (synonym: hfbr1).
DH10B; sites NotI + SalI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="hypothetical protein"
/protein_id="CAD38950.1"
/db_xref="GI:21739847"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="putative serine/threonine protein kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="DKFZp547E1613"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="DKFZp547E1613"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _stage="fetal"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 2223;
; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          483 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vector pSport1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
   240
                                                                                                                                                      180
                                                                                                                                                                                                                             280
                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    German
                                                                                                                                                                                                                                                                                                                                                                                                                                                              . _
```

-

밁 δÕ 밁 ρ 밁 Š 밁 Qγ 밁 δÃ 밁 ğ 밁 Ş 밁 δÃ 망 Ş 밁 Š 밁 Ş 밁 Ş В Š

```
1001
                                                                                                                                                                                                                                                                                                                               1121
                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  341 CGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCC
                                                                                                                                                                                                                                                                                      ATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCATGCTGAGCCGTCACGGGAAGCGGC 1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATGCGAGCCTGCCATCCAACGGAG
                 CCTTTTCACCGGAGCCGGGGCTGGAGATGAGGCTCGAGGCGGGGGCTCCCCGACTTCCA 1420
                                                                                     GTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTT 1360
                                                                                                                                                               CTGTACCCACCCGACGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCA 1300
                                                                                                                                                                                                                  GGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAAGATGATATATTATCTGC 1060
GTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTT
                                                                                                                                          CTGTACCCACCGACGGGCCTTGGAGATGGCCCAGCACAGCCAGAGATCCCGTAGCGTCA
                                                                                                                                                                                                                                                      GACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACCGATGCCGGGGGTGGTGGCTCCC 1240
                                                                                                                                                                                                                                                                                                                                                                TTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGACCTGCCTCCCCGGAATG
                                                                                                                                                                                                                                                                                                                                                                                                  TTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGACCTGCCTCCCCGGAATG 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAAGATGATATTATCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGA 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTAGGCGGGAAACACGAGCCAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAACCTCCGCCAGCTGGAGAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAGAGACCTAAAGCCCGGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTCTGCCAAGCTACTCCATCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAACCTCCGCCAGCTGCAGAAAGGTGAAACGGGGCGTCTTCCACATGCCCCACTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCATTATGCGTGTCCAGAGGTGATTAAGGGGGGAAAAATATGATGGCCGCCGGGCAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAGAGACCTAAAGCCCGAGAACCTGCTTTTGGATGAGAAAAACAACATCCGCATTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAGTTCTTCCGCCAGATTGTGTCTGCGCCTGGACTTCTGCCACAGCTACTCCATCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACG
                                                                                                                                          1200
                                                                    1260
                                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                  1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              400
```

```
RESULT 5
AB058714
LOCUS
   KEYWORDS
SOURCE
                                               DEFINITION
ACCESSION
                                                                                                                                                                               Q
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                 몽
                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1801
                                                                                                                                                     2221
                                                                                                                                                                                                                                                                          2101
                                                                                                                                                                                                                                                                                                                                                               2141
                                                                                                                                                                                                                                                                                                                                                                                             1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1421
                                                                                                                                                 GGGACCCCTCTGCCC 2235
                                                                                                                                                                                                                                                                                                                                                                                                      TCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCC 2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCC 1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGG 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGCGCAAGATGCAGGTCC 1720
                                                                                                                                                                                                                       AGCTGAGCAGCTCTCCCCGCCGAGG-CCCCCCCAAGGAAGCAAGCTCCTGGCCACCAAC 2319
                                                                                                                                                                                                                                                                                                  CCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCCCACCCGGCCGCCCAGACCCAG
                                                                                                                                                                                                                                                                                                                                                          TGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAG 2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGCCGAGTACAAGGCCAGTGGCGGCC 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACCGCTGAGGAGGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCCGGAGCTGGCAAAAACGCT 1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAACACCACCCCCAGCCCGGGGGTGGCGTCGGGGGAGCCGCCTGGAGGAGTCGTCTCA 1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCACCCGGGACCCCCGGGGA 1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCCAGGCTCCCCCGCGCTCCTCTGGCG
                                                                                                                                                                               GGGACCCCTCTGCCC 2334
                                                                                                                                                                                                            AGCTGAGCAGCTCTCCCCGCCGAGGCCCCCCCCAAGGACAAGAAGCTCCTGGCCACCAAC
                                                                                                                                                                                                                                                                      CCCGGCCTGCTGGTGCCCCACCCCGAAGCCTGCAGCCCCCACCCGGCCGCCCAGACCCAG
                                                                                                                                                                                                                                                                                                                              TGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGACGAGAAGAACGGGGCCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                          TCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCATGCCTTTCTGTCGATCCCCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAATATTCCTCGTGCTAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCCACCGGGACCCCGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCCAGGCTCCCCGCGCTCCTCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACGCAGACGCTTCTCGGGGCCCCAGGGGTGGGGGCCCCGGGGAGCAGCCCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAACGCAGACGCTGCCTTCTCGGGGGCCCCCAGGGGTGGGGGGCGCCGGGGGAGCAGCCCCCGC
                                          Homo sapiens mRNA for KIAA1811
AB058714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AB058714.1
 sapiens
                               GI:14017838
brain cDNA to mRNA,
                                                                         g
                                                          protein,
clone:ha06731
                                                                        mRNA
                                                          partial cds.
                                                                        linear
                                                                         PRI 05-JUN-2001
                                                                                                                                                                                                                                                                                                                             2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1480
                                                                                                                                                                                                                                                                                                                                                                                        2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1380
```

```
JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
   밁
                                                                  Š
                                                                                                                                           밁
                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 2146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
   241
                                                                     429
                                                                                                                                           181
                                                                                                                                                                                                                 369
                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                      309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          189
                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>د</del>ـــا
                                                                                                                                                                                                                                                                        GAAATATITTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACCTGGT 368
                                                                                                                                                                                                                                                                                                                                                                                                                 CATCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCCTGAAGCTCATCGAACACCCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAA 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGC 248
                                                              GCTGGACTTCTGCCACAGCTACTCCCATCTGCCACAGAGCCTAAAGCCCCGAGAACCTGCT 488
                                                                                                                                                                         AAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGC
GCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCT
                                                                                                                                    AAAGAAGGGGAGACTGACGCCCAAGGAGGCCCCGAAAGTTCTTCCGCCAGATTGTGTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (27-MAR-2001) Osamu Ohara, Kazusa DNA Rsearch In: Department of Human Gene Research; 1532-3, Yana, Kisarazu, 292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp, URL:http://www.kazusa.or.jp/huge, Tel:81-438-52-3913, Fax:81-438-52-3914)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ohara,O:, Nagase,T. and Kikuno,R. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nagase, T., Nakayama, M., Nakajima, D., Kikuno, R. and Ohara, O. Prediction of the coding sequences of unidentified human genes. The complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from brain which is the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 new cDNA clones from the complete sequences of 100 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 2576)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     large proteins in vitro Res. 8 (2), 85-95 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFA
LLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPDDCQSLLRGMISVEPEKRLSLEQIQK
HPWYLGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDERRLHREL
RSEEENQEKHIYYLLLDRKERKYPSCEDQDLPPRNDVDPRKRVDSPMLSHRKKRPER
KSMEVLSITDAGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSPLSSPRSPVFSF
SPEPGAGDEARGGGSPTSKTQTLPSRGPRGGAGEQPPPPSARSTPLPGPPPGSPRSSG
GTPLHSPLHTPRASPTGTTPPPSPGGGGYGGAAWRSRLNSIRNSFLGSPRFHRRKM
QVPTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFL
SIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGI
SIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGI
SIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGI
SVTTTLLSGPSRFEKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PPPGRPDPELSSSPRRGPPKDKKLLATNGTPLP"
1 842 c 766 g 460 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="BAB47440.1"
/db_xref="GI:14017839"
/translation="IVNREKLSESVLMKVERETAILKLIEHPHVLKLHDVYENKKYLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="KIAA1811"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="KIAA1811 protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Start codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="KIAA1811"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="vector:pBluescriptII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="brain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9606"
/clone="ha06731"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 2146; ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SK plus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kazusa DNA Rsearch Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                      428
                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
300
                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chiba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           code
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

Š В Qy В δõ 밁 δÃ

```
뭥
                                                                                                                                                                   1141
                                                                                  1449
                                                                                                              1201
                                                                                                                                         1389
                                                                                                                                                                                               1329
                           1509
                                                       1261
                                                                                                                                                                                                                                                   1269
                                                                                                                                                                                                                                                                              1021
                                                                                                                                                                                                                                                                                                        1209
                                                                                                                                                                                                                                                                                                                                                              1149
                                                                                                                                                                                                                                                                                                                                                                                                                     1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1029
                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             489
                                                                                                                                                                                                                       GGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGGGTGGGGGGCCCGGGGAGCAGCCCCCCGCCCCCAGTGCCCCGCTCCACACCCCTGCC
                                                                                                                                                                                  CCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGA 1388
                                                                                                                                                                                                                                                                              GGAGAACCAAGAAAAGATGATATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAG 1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCCGACGTCCTAGAGAGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAAACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAACGGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCCAGAGCCTCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAA
CGGCCCCCAGGCTCCCGCGCTCCTCGGCGGGACCCCCTTGCACTCGCCTCTGCACAC
                                                       CAGGGGTGGGGGGCGCGGGAGCAGCCCCCCCCCCCAGTGCCCCGCTCCACACCCCCTGCC
                                                                                                              TGAGGCTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCC
                                                                                                                                        TGAGGCTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCC 1448
                                                                                                                                                                   CCCTCTAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGA
                                                                                                                                                                                                                                                                                                        GAGCATCACCGATGCCGGGGGTGGTGGCTCCCCTGTACCCCACCGGGCCCTTGGAGAT 1268
                                                                                                                                                                                                                                                                                                                                                                                           GGAGAACCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGGCTGCATCGCGAGCTGCGCAGTGAGGA 1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCC
                                                                                                                                                                   1200
                                                                                                                                                                                                                                                                              1080
                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             548
                            1568
                                                                                 1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
 1380
                                                                                                              1260
                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                   1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                900
```

. \_

. . .

ρ 밁 δ В δÃ 밁 Š 밁 õ В δÃ 밁

밁 Ş 밁 Ş 밁 Ş 밁 Š В δÃ 밁 δõ 밁 δ. 밁 Ş

```
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                 RESULT 6
BC016681
LOCUS
 REMARK
COMMENT
                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                              닭
                                                                                                                                                                                                    DEFINITION
                                                                          AUTHORS
TITLE
                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1561
                                                                                                                                                                                                                                                                               2101
                                                                                                                                                                                                                                                                                                      2289
                                                                                                                                                                                                                                                                                                                              2041
                                                                                                                                                                                                                                                                                                                                                       2229
                                                                                                                                                                                                                                                                                                                                                                                1981
                                                                                                                                                                                                                                                                                                                                                                                                         2169
                                                                                                                                                                                                                                                                                                                                                                                                                               1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1569
                                                                                                                                                                                                                                                                                                                                                                                                                            GCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCAGAGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGA 1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC
                                                                                                                                                                                                                                                                                                                                           CCTGCAGCCCCACCCGGCCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGCCGAGGCCC 2288
                                                                                                                                                                                                                                                                                                                                                                                            GGCCCTGGCAGACGAGAAGAACGGGGCCCAGACCCGGCCTGCTGGTGCCCCACCCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCGTCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGTCGGGGGAGCCGTCGAGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCCGGGCCAGTCCCACCGGGACCCCGGGGACAACACCACCCCCCAGCCCCGGGGGTGG
                                                                                                                                                                                                                                                                               CCCCAAGGACAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC
                                                                                                                                                                                                                                                                                                                             CCTGCAGCCCCACCCGGCCGAGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGCCGAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGGTGGACATCAGCTCCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTCAGGGCCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCTCGCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGGATGTCCAGCTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTCGGGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCCCTGGCAGACGAGAACGGGGCCCAGACCCGGCCTGCTGCTGCCCCACCCCCAAG
                                                                                                                                                                           Homo sapiens,
BC016681
BC016681.1 GI
                                 Direct Submission
Submitted (31-OCT-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
 NIH-MGC Project
Contact: MGC hel
                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
1 (bases 1 to 2128)
                                                                                                                                         Homo
                                                                                       Strausberg, R.
                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens
                                                                                                                                                                             GI:16741775
ect URL:
help des
                                                                                                                                                                                                    2128 h
clone MGC:21870
  desk
                                                                                                               Chordata; Craniata; Vertebrata; Primates; Catarrhini; Hominidae;
           http://mgc.nci.nih.gov
                                                                                                                                                                                                    bp mRNA 1:
0 IMAGE:4341838,
                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                      2334
                                                                                                                                                                                                     mRNA,
                                                                                                                                                                                                                                                                               2146
                                                                                                                                                                                                     complete
                                                                                                                            Euteleostomi;
                                                                                                                                                                                                                  PRI 05-NOV-2001
                                                                                                                 HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                               1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                              2100
                                                                                                                                                                                                                                                                                                                                                                               2040
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNT
                                       1158
                                                                                                                 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
  469
                                                                              409
                                                                                                                                                          349
                                                                                                                                                                                                                                      289
                                                                                                                                                                                                                                                                           978
                                                                                                                                                                                                                                                                                                                  229
                                                                                                                                                                                                                                                                                                                                                         918
                                                                                                                                                                                                                                                                                                                                                                                              169
                                                                                              CCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCCGGAAGCGTGTGGATTCTCCCAT 1157
                                                                                                                                                                          AGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGA 1097
                                                                                                                                                                                                                                                            GGGCTGCTTCAGGGACCGCGAGAGGGTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCA 1037
GCTGAGTCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCAC
                                       GCTGAGCCGTCACGGGAAGCGGCCACCAGAGCCGGAAGTCCATGGAAGTCCTGAGCATCAC 1217
                                                                                                                                                                                                                                  GGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGCAACCA 348
                                                                                                                                                                                                                                                                                                                GCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACT
                                                                                                                                                                                                                                                                                                                                  GCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACT 977
                                                                                                                                                                                                                                                                                                                                                                                            CCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGGAAGCGTGTGGATTCTCCCAT
                                                                                                                                                      AGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAK Plate: 26 Row: j Column: 5
This clone was selected for full length sequencing because it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lou Staudt
Tissue Procurement: Lou Staudt
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Baylor College of Medicine Human Genom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       passed the following selection criteria: Hexamer frequency ORF analysis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Web site: http://www.hgsc.bcm.tmc.edu/cdna/
Contact: villalon@bcm.tmc.edu.
Villalon, D.K., Luna, R.A., Hale, S.M., Hulyk, S., I
N.M., Holloway, M., Telford, B, Hodgson, A., Bouck,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequencing Center
Center code: BCM-HGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Muzny,D.M., Gibbs,R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LTPESSPELAKRSWFGNFISLDKEEQITILVLKINGFLGSPRFHRRKMQVPTAEEMSS
SQTSFRAEYKASGGPSVFQKFVKFQVDISSSEGPEPSPRRDGSGGGITVHAFLSIFSLSHSVL
PSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPEL
SSSPRRAPPKDKKLLATNGTPLP"
3 707 c 651 g 362 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: pCMV-SPORT6"
227. .1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="MGC:21870 IMAGE:4341838"
/tissue_type="Lymph, lymphoma"
/clone_lib="NIH_MGC_85"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'organism="Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1470.6;
Pred. No. 3.8e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -256;
4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , I<sub>L</sub>,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   х.,
Yu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Garcia,
l, W.,
528
                                                                         468
                                                                                                                                                        408
                                                                                                                                                                                                                                                                                                                  288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

Š

밁

Ş

В

-

S

CAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC

δõ

В

Ş 밁 Š 밁 S

BASE

밁

```
VQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       덩
                                                                        Ş
                                                                                                                         δÃ
                                                                                                                                                                            Q
                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
맑
                     Ş
                                                 B
                                                                                                   밁
                                                                                                                                                     밁
                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                 1489
                                                                                                  1429
                                                                                                                                                      1369
                                                                                                                                                                                                        1309
                                                                                                                                                                                                                                                                                                             1189
                                                                                                                                                                                                                                                                                                                                     1878
                                                                                                                                                                                                                                                                                                                                                                1129
                                                                                                                                                                                                                                                                                                                                                                                                                1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1,398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCCAGCCCTCTAAG 1337
                                               CATCAGCTCCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTGG
                                                                                                                                                                                                                                                                                                                         TGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                GGGCGCCGGGAGCAGCCCCCCCCCCCAGTGCCCCGCTCCACACCCCTGCCCGGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGCTGGAGATGAGGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCG
                        CCCACCCGGCCGCCCAGACCCAGAGCTGAGCAGCTCTCCCCGCCGAGGCCCCCCCAAGGA
                                                                                                  GGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGC
                                                                                                                                                     CATCTACTCCGTCACCTTCACTCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGT
                                                                                                                                                                                                                                                         CGAGTACAAAGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGGA 1308
                                                                                                                                                                                                                                                                                  CGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTCCGCTTCCAGGTGGA 1997
                                                                                                                                                                                                                                                                                                             TGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGGC
                                                                                                                                                                                                                                                                                                                                                               ACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCA
                                                                                                                                                                                                                                                                                                                                                                                      ACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCCA 1877
                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGA 1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTT 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCTCCCCGCGCTCTCTGGCGGGACCCCCTTGCACTCGCCCTCTGCACACGCCCCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCGCCGGGGAGCAGCCCCCGCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCAGGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCAGGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGCTCCCCGCGCTCCTCGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGC
                                                                                                                                                                             2117
                                                                                                                                                                                                                                                                                                                                                              1188
                                                                                                                                                                                                                               2057
                                                                                                                                                                                                                                                                                                            1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               708
                                                 1548
                                                                          2237
                                                                                                                           2177
                                                                                                                                                     1428
                                                                                                                                                                                                        1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1397
 1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               768
```

Db 1609 CAAGAAGCTCCTGGCCACCAACGGGACCCCTCTGCCC 1645

						6;	•	••	002
-					~				
					:	e <sup>3</sup>			
-	•			<del></del>	×.		•	**	1 1
				<i>'''</i> .			•		
ДУ ДУ	AG AG	оь Ф	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	04 P	Dy Qy Qy	8 4 b	2 V V V V V V V V V V V V V V V V V V V	עס עס פע פעס פעס פעס פעס פעס פעס פעס פעס	2 Db Db Db Db Db Db Db
<b>σ &lt; σ</b>	4 6 4	o 4 o	4 5 4 5	4 9 4	<b>д. 4</b> д 4	8 4 8 4	8 4 8 4	8 4 8 4 ·	
147 175 153	1634 1412 1694	1327 1574 1358	1287 1454 1287 1514	1334 1274 1394	1214 1163 1274 1214	1094 1043 1154 1103	974 923 923 1034 983	854 809 914 863	629 734 689 794 , 749
4 4									
GIC	GGG 	GG	Teg	TAAGCAGCCCAAGG	CAC GAC GCA GCA	GAT GAT	ACT ACT ACT	CAT	GGG GGG GGG GAT GAT
CTCAC	AGCC GGTC	CAG	agge agge	AGCAGCCC             AGCAGCCCC   CGAGGCGG	CAGC	CCAC	GGGG GGGG AGAA	AGG	GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
#20 	9000	1000 1000	CICC	0000	reco CCAC	GAC	CTGC CTGC	CGGC	GGTC
GAG		ACC CT	3666	AGG	GGG HAGA HAGA	CTG	TTC	AAA AAA CIG	CAC
CTG	AGG     AGG	GGG	949 949	AGT	GAC GAC	CAC	AGG CGA	CAC	ATG
GCG2	AGTO GCGO	GGGCCAGTCCACCGGGACAACACCCCGAGGGCACACCCCAGGGGACACCCCGGGGACAACA	AGCAGCCCCTCAGCACCTCCACACGCTGCCCCTGCCCCTGCCCCTGCCCCTGCCCCTGCCCTGCCCTGCCCTGCCCTGCACCACAGGGGCAGTCGCCTCTGCACACGCCTCTGCACACGCTCTGCACACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACGCTCTGCACACACGCTCTGCACACACGCTCTGCACACACGCTCTGCACACACGCTCTGCACACACGCTCTGCACACACA	 	CGT CGT CGT CGT	660 660 660 660 660	GAC	GAG	TTC
DAAG	DGTC	0000 11	CCCCC	GTC!	36C3	CGGI	TATO	CTGC	GACT
GCI	STCA	 3GG# 1ACC	3000 1000 1000	TTTI	#OTA FILL FORE	AATG	SAGA	SACC	FATC
CCT CCT CCT CCT	ACT ACTA	CCA - A - A - A A A A A A A A A A A -	GCCCCCC          TCACCCC	AAA	PETO PETO PETO PETO PETO PETO PETO PETO	ATG	AGGC	C	ACA TTCA TCA
GGT GGC	- 60 - 11 - 11 - 120 - 120	CAC CCC	(C) (E) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C	TTT	TAC TGC GAG	TAG	TGC	GCC	ACT CGC GTC
LIEC LCEC	TCAL TCAL	CACC	GACO	CACO	CTG CTG CTG	ACC ACC ACC AACC	ATC	TGG:	TAG
3GA/	GEA.	AGGC CCCC	CAAC	Cec.	COAC	CTCC	GCG	AGC 1	GACI ATTO ACTO AGCI
GAI	CAC CAC	GAC	CTC	AGCC 	SACC	DCCC	AGGI AGGI AAGI	AGCG	AGCI GCCI H
CAT		30 ACC	10 AC	GGG FITC	3GGC 3GGC 3GGC	GAJ CAJ	lece		GAG GAG GAG GAG GAG
OEC CAS	CAG TCT	CGG	ACC ICC	TCG	GICIT	609 609 609	GTA	TGG TCC TAGA	GAA
CTTC	  		409 409 409 409 409 409 409	TGG.	GGA TGA CTC	TGT AGT 1-1	TGA CCCC	TCG  GAG GAG	GAA CCT ACA ACA
GACI	CIC	TGGC	CACC	AGA:	GATO	GGA:	GGA(	CATO	GGTO GAGO ACGO TCCT
GCTTCCACCGCGGAAAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACAACCAGGAGGTTCCGACGCCGGAGGAGATGTCCAACCTGACAACCAGGAGCTCCTGGAACTTCATCATCCAACCAA	GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC			TAAGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGGCTGGAGATGAGG	TCACCGATGCCGGGGTGGTGGCTCCCTGTACCCACCGACGGCCTTGGAGATGGCCC	AGGACCAGGACCTGCCCGGAATGATGTTGACCCCCCGGAAGCGTGTGGATTCTC	CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCGAGTGAGAGAGA	ACCTAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCC	TGGTGGGGGCTCTGCCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGC GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA [
1531 1813 1591	1693 1471 1753	1357 1633 1411	1286 1513 1326 1573	1393 1286 1453	1273 1213 1333 1273	1153 1102 1213 1162	1033 982 1093 1093	913 862 973	688 793 748 853 808

AX327995		
DEFINITION LOCUS	AX327995 2025 bp DNA linear PAT 07-JAN-20 NSCAUENCE 3 from Patent WOO181588.	$\simeq$
VERSION KEYWORDS		
SOURCE ORGANISM	human. Homo sapiens	
1	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.	
REFERENCE AUTHORS		
TITLE JOURNAL	2246, protein kinase molecules and uses therefor Patent: WO 0181588-A 3 01-NOV-2013) Millennium Pharmaceuticals, Inc. (US)	
FEATURES Sourc	Location/Qualifiers e 12025	
BASE COUNT ORIGIN	442	
Query Ma Best Loc Matches	Match 41.2%; Score 961; DB 6; Length 2025; Local Similarity 70.1%; Pred. No. 5.8e-164; Local Similarity 0; Mismatches 435; Indels 195; Gaps	•
74	CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAAGACGCTGGGCAAAAGGACAGA 133	
Db 29	CGCAGCACGCGCAGTATGTTGGGCCCTACCGGCTGGAGAAGACGCTGGGCAAGGGGCAGA 88	
Qy 134 Db 89	CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAAGGTCGCCATCAAGATCG 193	
Qy 194	TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCCGGGAGATCGCCATCC 253	
Db 149	TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC 208	
Qy 254	TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 313	
Db 209	AA A	
Qy 314	ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAAAGA 373	
Db 269	ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTTCTTCGACTACCTGGTGAAGA 328	
Qy 374	AGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTCGCCTGG 433	
Db 329	AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG 388	
Qy 434	ACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTTTGG 493	
Db 389	ACTTCTGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGGAAAAACCTCCTGCTGG 448	
Оу 494	ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACA 553	
Db 449	ACGAGAAGAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACA 508	
Qу 554	GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG 613	
Db 509	GCCTGTTGGAGACCAGCTGTGGGTCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGG 568	
Оу 614	AAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC 673	
Db 569	AGAAGTATGACGGCCGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGC 628	
Оу 674	TCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGCAGAAGGTGAAAC 733	

Ş

밁 Š

밁

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COCUS
 Query Match
Best Local Similarity
Matches 1477; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGAACAAATATTCCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGAGACATCG 1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGATATCACCTACACGGAGGGT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCCGAGTACAAGGCCACGGGGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGCAGA 2180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGACATCAGCTCCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCCGAGTACAAGGCCAGTGGCGGCCCCCCCCTCCTCCAAAAGCCCCGTCCGCTTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTGGAGACCATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCCAGCACT 1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAGCAGATCTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AX327993 2219 bp
Sequence 1 from Patent WO0181588.
AX327993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2246, protein kinase molecules and uses Patent: WO 0181588-A 1 01-NOV-2001; Millennium Pharmaceuticals, Inc. (US) Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AX327993.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Meyers, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                      /protein_id="Cad20436.1"
/db_xref="GI:18098147"
/db_xref="GI:18098147"
/translation="mystgkdgaqqhaqyygpyrlektlekgytgyhcytcqk
/translation="mystgkdgaqqhaqyygpyrlektlekgytgyhcytcqk
vaakkyvnreklesylmkyrebelailkliehephylklhdygenkkylyluehysgge
Lfdylvkkgrlipkearkffrqiisaldfchsisichcpukgywscgyvllfalldeknniriadf
gwaslqygdsiletsggsphyacpevligeekyddarritlehiqkhryiggkne
gwaslqygdsiletsggbphyacpevligekyddarritlqdllseeenoekni
gwaslqygdsiletspgbedllphyacpevlarritlgarritlgelenoekni
bulrqllervkgryphhfiippddyllsmysspkllrgkryddarritlgdllseeenoekniy
filldkekrypgdebdlpphreiddphyakrydsphyhhfigrphyhfyyddg
sprekriempipesspsyggvphraklnsikssflgsprfhrrklgvpfpeemsnl
fprsspeagfnpfpesspsyggvphraklnsikssflgsprfhrrklgvpfpeemsnl
fprsspeagfnpfpesspsyggvphraklnsikssflgsprfhrrklgipslshsyis
gtsfraeykatggpavfgkpykfQvdifyteggeaqkengiysyfftllsgpsrfkr
vvetiqaqllsfidpaqaltsppppapglswgablkgqxvatsyessl"
76 a 716 c 683 g 344 t
   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1940
                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                      /note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:18098146
                   41.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata;
Primates;
Score 961; DB 6; Length 2219; Pred. No. 5.7e-164; 0; Mismatches 435; Indels 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----GGGGAGGCGCAGAAGGAGA 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hominidae;
 Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-JAN-2002
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1771
 6
                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                   Š
                                                                                            밁
                                                                                                                        δÃ
                                                                                                                                                                 밁
                                                                                                                                                                                                 δĀ
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                   1095
                                                       1094
                                                                                             1035
                                                                                                                              1034
                                                                                                                                                                   975
                                                                                                                                                                                                                                          915
                                                                                                                                                                                                                                                                                                                861
                                                                                                                                                                                                                                                                                                                                                                                      801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141
                                                                                                                                                                                                     974
                                                                                                                                                                                                                                                                          914
                                                                                                                                                                                                                                                                                                                                                   854
                                                                                                                                                                                                                                                                                                                                                                                                                          794
                                                                                                                                                                                                                                                                                                                                                                                                                                                             741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGACAGA 133
                                                                                                                                                                                                                                                           CCATGCGGAGCCTGCCATCCAACGGAGACCTGGACCCCGACGTCCTAGAGAGCATGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGATCG
                   AGGATGAGGACCTGCCCCCCCGGAACGAGATAGACCCTCCCCGGAAGCGTGTGGACTCCC
                                        AGGACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTC 1153
                                                                                                             ACCAAGAAAAGATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTG
                                                                                                                                                               CACTGGGCTGCTTCCGAGACCGCAACAAGCTGCTGCAGGACCTGCTGCTGCAGGAGGAGGAG
                                                                                                                                                                                                                                      AGATCCGCTCGCTGCCCAGCCTGGAGGACATCGACCCCGACGTGCTGGACAGCATGCACT
                                                                                                                                                                                                                                                                                                                                                 TGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGCGTGTTCCACATGCCGCACTTTATCCCGGCCGACTGCCAGAGTCTGCTACGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAGTATGACGGCGGAAGGCGGACGTGTGGAGCTGCGGCGTCATCCTGTTCGCCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAATATGATGGCCGGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGGACA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTTCTGCCACAGCCACTCCATATGCCACAGGGATCTGAAAACCTGCAAAACCTCCTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTCTGCCACAGCTACTCCCATCTGCCACAGAGACCTAAAAGCCCGAGAACCTGCTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCCTGG 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTTGTACCTGGTGCTAGAACACGTGTCAGGTGGTGAGCTCTTCGACTACCTGGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAACCGTGAGAAGCTCAGCGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGTCTGGTGAAGCTGGGGGTTCACTGCGTCACCTGCCAGAAGGTGGCCATCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCAGCACGCAGTATGTTGGGCCCTACCGGCTGGAGAGACGCTGGGCAAGGGGCAGA
                                                                                          CACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGA 1033
                                                                                                                                                                                                                                                                                                               ATATAGGGGGCAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGC
                                                                                                                                                                                                                                                                                                                                                                                      TGAGCGAGGTGGACGCCGCACGCCGCCTCACGCTAGAGCACATTCAGAAACACATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTGTTGGAGACCAGCTGTGGGTCCCCCCCACTACGCCTGCCCCGAGGTGATCCGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGAGAACAACATCCGCATCGCAGACTTTGGCATGGCGTCCCTGCAGGTTGGCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGGGAGGCTGACGCCTAAGGAGGCTCGGAAGTTCTTCCGGCAGATCATCTCTGCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGGGGTGAGCTATTCGACTACCTGGTAAAGA 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAAT 313
```

613

500 493 440 380

320

253

1154

1094 1093 1034

973

974

914 913 960 853

800 793 740 733 680 673 620 В Š 밁 Š 밁 Ş 밁 Š

Š

	· .		.·····································
Qy 257 AGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAAAATATT 316	/COCOL_Start=3 //cocol_start=3 //product="putative serine/threonine protein kinase //db_xref="call="call" call to call serine/threonine protein kinase //db_xref="call to call to call serine/threonine protein kinase //db_xref="call to call to call serine/threonine protein kinase //db_xref="call to call to call to call similarity 68.6%; pred.  //db_xref="call to call to call to call similarity 68.6%; pred. No. 4.3e-138; //producted to call serine/threonine protein kinase //producted serine/to call serine/threonine protein kinase //db_xref="call to call serine/threonine protein kinase //db_xref="call to call t	putative; se human.  Homo sapiens Eukaryota; w Mammalia; Eu 1 (bases 18 (1) 2106449 11124703 2 (bases 1) 2106449 11124703 2 Stanchi, F. Direct Submitted (Conversitation of the conversitation of the	RESULT 9 HSA6701 LOCUS HSA6701 DEFINITION Homo sapiens mRNA for putative serine/threonine protein kinase, ACCESSION AJ006701 VERSION AJ006701 GI:3217027

	TGGCAGA 2180            TGTCAGA 1992	2174 1986	р У
2173 1985	TGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCC	2114 1926	DP OA
2113 1925	GTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAG	2054 1866	p Qy
2053 1865	TGACATCACCTCCTGAGGGTCCAGAGCCCTCCCCGGACGGA	1994 1824	g dg
	GGCCCAGTACAAGCCCAGTGCCGCCCTCCGTCTTCCAAAAGCCCCTCCGCTTCCAGG	7 10	B 8
σω	TCCATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCA	7 8	B 8
1873 1703		on 60	D 04
1813 1643	AGTCCTCCCCGGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAG	1754 1584	pb dq
1753 1583	GCTTTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAG	1694 1524	D Qy
1693 1523	GGGGAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTC	1634 1464	g 49
1633 1463	GGGCCAGTCCCACCGGGACCCCGGGGACAACACCACCCCCAGCCCCGGCGG	1574 1410	B S
1573 1409	ccccA	1514 1379	дь Q <b>y</b>
1513 1378	GTGGGGGCGCCGG	1454 1339	g 49
1338		1339	Вb
1453	CTCGAGGCGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCAGGG	1394	Qy
1393 1338	TARGCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGG	1334 1326	Db Qy
1333 1325		1274 1266	Db VQ
1273 1265	TCACCGATGCCGGGGTGGTGGCTCCCCTGTACCCACCCGACGGCCTTGGAGATGGCCC	1214 1215	₽ Q
1213 1214	CATGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCA	115 <b>4</b> 1155	Оу

1577 CCAGTCCCACCGGGACCCCGGGGACAACACCCCCCCAGCCCCGGCGG	VΩ
GACACCTGTCCACACGCCAAAG	Db
; ; ; ; ; ; ;	Qy
CACCCCT	DЬ
CAGTGCCGCTCCACACCCCTGCC	Qγ
1079 1078	В
1397 GAGGCGGGGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCCAGGGGTG 1456	Qy
1066 GCAGCCCCGGGT 1078	₽
1337 GCAGCCCAAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCCGGGGGCTGGAGATGAGGCTC 1396	Qy
1006 ACGGCCAGAGGTCTCGGTCCATCAGCGCTCCTCAGGCCTTTCCACCACCCAGCCCACTCA 1065	뭥
1277 ACAGCCAGAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAA 1336	VΩ
	Ъ
1217 CCGATGCCGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGC 1276	γQ
895 TGCTGAACCGGCACGGCAAGCGGCGACGAACGCAAATCCATGGAGGTGCTCAGCGTGA 954	뮍
1157 TGCTGAGCCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCA 1216	Qy
835 ATGAGGACCTGCCCCCGGAACGAGATAGACCCTCCCCGGAAGCGTGTGGACTCCCCGA 894	DЬ
1097 ACCAGGACCTGCCTCCCCGGAATGATGTTGACCCCCCCGGAAGCGTGTGGATTCTCCCA 1156	Qy
775 AGGAGAAGATGATTTACTTCCTCCTCCTGGACCGGAAAGAAA	DЬ
1037 AAGAAAAGATGATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGG 1096	Qy
1 TGGGCTGCTTCCGAGACCGCAACAACCTGCTGCTGCTGCTGCTGCTGAGGAGGAGACC 7	뫄
77 TGGGCTGCTTCAGGGACCGCGAGAGAGCTGCATCGCGAGCTGCGCACTGAGGAGGAGGAGAACC 10	Q V
$\vdash$	당
917 TGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCAC 976	Qy
601 TAGGGGGCAAGAATGAGCCCGAACCAGAGCAGCCCATTCCTCGCAAGGTGCAGA 654	망
857 TAGGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCC	Qy
541 GCGAGGTGGACGCCGCACGCCTCACGCTAGAGCACATTCAGAAACACATATGGTATA 600	뮍
797 TCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACC 856	Qy
481 GCGTGTTCCACATGCCGCCTTTATCCCGCCCGACTGCCAGAGTCTGCTACGGGGCATGA 540	Ωb
737 GCGTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGA 796	Qy
421 TGGGGGCTCTGCCCTTCGACGATGACAACTTGCGACAGCTGCTGGAGAAGGTGAAGCGGG 480	ర్జ
677 TGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGG 736	γQ
361 AGTATGACGGCCGGAAGGCGGACGTGTGGAGCTGCCGGCGTCATCCTGTTCGCCTTGCTGG 420	망
- ⊢3	Qy
	B 5
E3 =00=000000000000000000000000000000000	?
497 AGAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGGACAACCC 556	B 5
23 COCKECKOCHOOKOOMOOKOOMOOOOMKOOOOMAAAAAAAAAAAAAAAA	2

FEATURES

source

/organism="Homo sapiens"

.1014

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
HSM803233
                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGAGTACAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCCGTCCGCTTCCAGGTGG 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGATCTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGA 1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGA 2180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGG 2116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGAGTACAAGGCCACGGGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGCCTTTCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCTTCAGGG 1936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCCGCCTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTTCCCCTCGCT 1696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGCCCGGCTGGCACGCCCAACCCCACGCCCCGTCCAGCCCC-----AGCGTCGGAG 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCATCTACTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATCACCTACACGGAGGGT-----------GGGGAGGCGCAGAAGGAGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACGGGACGGCAGCGGAGGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACGCCTTCCTGTCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCAAACGAGCTTCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACAAATATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGACATCGTCC 1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCACCGCCGAAAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAGAGT 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCACCGGCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGT 1756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGTGCCCTGGAGGGCGCGCCTCAACTCCATCAAGAACAGCTTTCTGGGCTCACCCCGCT 1263
                                                                                                                                          Wiemann,S.

Direct Submission

Direct Submission

Submitted (09-JUL-2002) 1, D-85764 Neuherberg, GERMANY

Submitted (09-JUL-2002) 1, D-85764 Neuherberg, GERMANY

Clone from S. Wiemann, Molecular Genome Analysis, German Cancer

Research Center (DKFZ); Email s.wiemann@dkfz-heidelberg.de;

sequenced by GBF (National Research Centre for Biotechnology Ltd.,

sequenced by GBF (National Research Centre for Biotechnology Ltd.,

Braunschweig/Germany) within the cDNA sequencing consortium of the
This clone (DKFZp547F069) is available at the RZPD in Berlin. Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059 Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de Further information about the clone and the sequencing project is available at http://mips.gsf.de/proj/cDNA/.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens mrna; cDNA DKFZp547F069 (from clone DKFZp547F069).

AL831945
AL831945.1 GI:21732471
                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1014)
                                                                                                                                German Genome Project
                                                                                                                                                                                                                                                                                                Bloecker, H., Boecher, M., Brandt, P., Mewes, H.W., Weil, B. and
                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1443
```

Db 123 GACCAGCTGTGGGTCCCCCACTACGCCTGCCCCAGGGGAAACTATGA 182  Oy 624 TGGCCGCCGGGGCAGACATGTGGAGCTGTGCGAGTCATCCGGGGGAAACTATGA 182  Oy 624 TGGCCGCCGGGAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCTGCTGGGGGC 683	6 -2002 r to.
Matches 1075; Conservative 01.9%; Pred. NO. 4.1E-79;  Matches 1075; Conservative 02; Mismatches 372; Indels 290; Ga  444 CAGCTACTCCATCTGCCACAGAGACCTAAAGCCGGAGAACCTGCTTTTGGATGAGAAAA	
(E-mail:cdnal@ims.u-tokyo.ac.]p, Tel:81-3-5449-5286, Fax:81-3-5449-5416)  COMMENT NEDO human cDNA sequencing project supported by Ministry of Economy, Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science, University of Tokyo (partly supported by Science and Technology Agency).  Location/Qualifiers  1. 3156 2. 1. 3156 2. 1. 3156 2. 2. 2. 3156 2. 2. 3156 2. 31	0;
Matsumura, K., Nakajima, Y., Mizuno, T., Morinaga, M., Tanigami, A., Fujiwara, T., Ono, T., Yamada, K., Fujii, Y., Ozaki, K., Hirao, M., Ohmori, Y., Ota, T., Suzuki, Y., Obayashi, M., Nishi, T., Shibahara, T., Tanaka, T., Nakamura, Y., Isogai, T. and Sugano, S.  TITLE NEDO human cDNA sequencing project  JOURNAL Unpublished  REFERENCE 2 (bases 1 to 3156)  AUTHORS Sugano, S., Suzuki, Y., Ota, T., Obayashi, M., Nishi, T., Isogai, T., Shibahara, T., Tanaka, T. and Nakamura, Y.  TITLE Direct Submission  JOURNAL University of Tokyo, Laboratory of Genome Structure, Human Genome Center; Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-839, Japan  (Fermali: Agalaine 11-tokyo and the molicular and the structure, Human Genome (Fermali: Agalaine 11-tokyo and the molicular and the structure)	LSQTS GPSRR
KEYWORDS oligo capping; fis (full insert sequence).  SOURCE Homo sapiens ileal mucosa cDNA to mRNA, clone_lib:KAIA clone:KAIA00425.  ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  REFERENCE 1 AUTHORS Kawakami, T., Noguchi, S., Itoh, T., Shigeta, K., Senba, T.,	

RESULT 11 AK074411 LOCUS DEFINITIO ACCESSION VERSION	Qy 227 Db 48	Qy 221 Db 42	Qy 215 Db 36	оу 209 Db 30	Qy 203 Db 24	Qy 197 Db 18	ОУ 191 Db 12	Qy 185 Db 6	Qy 179 Db	Query   Best L Matche	pol BASE COU ORIGIN	gen
11 1 AK074411 1 AK074411.1 GI:18677005		117 CCCACCCGAAGCCTGCAGCCCCACCCGGCCGAGACCCAGAGCTGAGCAGCTCTCC 2276	.57 GCCCTCCGTGCAGGCCCTGGCAGACGAGAACGAGAACGGGCCCAGACCCGGCCTGCTGCTGGTGC 2216	97 CCGTCGGTTCAAGCGAGTGGTGGAGACCATCCAGGCACAGCTCCTGAGCACTCATGACCA 2156	37 GGACGGCAGCGGAGGTGGTGGCATCTACTCCGTCACCTTCACTCTCATCTCGGGTCCCAG 2096	777 GCCCGTCCGCTTCCAGGTGGACATCAGCTCCTCTGAGGGTCCAGAGCCCTCCCCGCGACG 2036				<pre>/ Match 23.1%; Score 538; DB 9; Length 1014; Local Similarity 100.0%; Pred. No. 2e-87; les 538; Conservative 0; Mismatches 0; Indels 0; Gaps 0;</pre>	1yA_site 968	/db_xref="taxon:9606" /chromosome="19" /clone="pkrzp547F069" /clone="pkrzp547F069" /clone_lib="547 (synonym: hfbr1). Vector pSport1; host DH10B; sites NotI + SalI" /dev_stage="fetal" 1.

•

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                 Ş
                                              밁
                                                                        Ş
                                                                                                       밁
                                                                                                                                 Š
                                                                                                                                                                  밁
                                                                                                                                                                                           Ş
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                               日
                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
1944 CAAGGCCAGTGGCGGCCCCTCCGTCTTCCAAAAGCCCGTTCCGCTTCCAGGTGGACATCAG
                                                                                                                                                                                                                                                        1704
                                                                                                                                                                                                                                                                                                                                                                                                                                      1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1104
                                                                                                                                                                                                                                                                                                                  1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1044
                                                                                                                                                                                                                           991
                                                                                                                                                                                                                                                                                      931
                                                                                                                                                                                                                                                                                                                                               877
                                                                                                                                                                                                                                                                                                                                                                                                           836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 328 CAAGAATGAGCCCGAACC-----AGAGCAGCCCATTCCTCGCAAGGTGCAGATCCGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       924
                                                                                                                                                                                                                        CCGGAAACTGCAAGTTCCGACGCCGGAGGAGATGTCCAACCTGACACCAGAGTCGTCCCC
                                                                                                                                                                                                                                                                                    CCCGCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGGGAGCAGCCCCCCCCCCCCAGTGCCCGCCTCCACACCCCTGCCCGGCCCCCCAGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGTCACGGGAAGCGGCGACCAGAGCGGAAGTCCATGGAAGTCCTGAGCATCACCGATGC 1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTGCCTCCCCGGAATGATGTTGACCCCCCCCGGAAGCGTGTGGATTCTCCCCATGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGATATTATCTGCTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGACCAGGA
                                            CCTGTCGATTCCCAGTCTCAGCCACAGCGTCATCTCCCCAAACGAGCTTCCGGGCCGAGTA
                                                                        TCTGTCGATCCCCAGCCTGAGTCACAGTGTGCTGTCACAGACCAGCCTTCAGGGCCGAGTA
                                                                                                      CTTCGTGGTCATCAAAGACAAACCTCTGAGCTCCATCAAGGCTGACATCGTGCACGCCTT
                                                                                                                       ATTCCTCGTGCTAAAGGACAAACCTCTCAGCAGCATCAAAGCAGAGACATCGTCCATGCCTT
                                                                                                                                                                                                                                                       GCGCAAGATGCAGGTCCCTACCGCTGAGGAGATGTCCAGCTTGACGCCAGAGTCCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCCAGGGGTGGGGGCGC 1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGTCTCGGTCCATCAGCGGTGCCTCTCAGGCCTTTCCACCAGCCACTCAGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---GACGGCGCTCCCCGGTGCCTGCGCGGCGGCCATTGAGATGGCCCAGCACGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGGGGTGGTGGCTCCCCTGTACCCACCCGACGGGCCTTGGAGATGGCCCAGCACAGCCA 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGATTTACTTCCTCCTCGGGCCGGAAAGAAAGGTACCCGAGCCAGGAGGATGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTCCGAGACCGCAACAAGCTGCTGCAGGACCTGCTCCGAGGAGGAGGAACCAGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAAGAAAA 1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGAGCATGGCATCACTGGGCTG
                                                                                                                                                               GGAGCTGGCAAAACGCTCCTGGTTCGGGAACTTCATCTCCTTGGACAAAGAAGAACAAAT
                                                                                                                                                                                                                                                                                                                  CTGGAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCG
                                                                                                                                                                                                                                                                                                                                               GGCTGGCACGCCCAACCCCCACGCCCCGTCCAGCCCC-----AGCGTCGGAGGGGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGG 140:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGATCCCGTAGCGTCAGTGGAGCCTCCACGGGTCTGTCCTCCAGCCCTCTAAGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGGCACGGCAAGCGGCCAGAACGCAAATCCATGGAGGTGCTCAGCGTGAC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTGCCCCCCGGAACGAGATAGACCCTCCCCGGAAGCGTGTGGACTCCCCGATGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----ACCCCCAAGGGGACACCTGTCCACACGCCAAAGGAGAGCCC
                                                                          1943
                                                                                                      1170
                                                                                                                                                                                            1823
                                                                                                                                                                                                                                                       1763
                                                                                                                                                                                                                                                                                                                1703
                                                                                                                                                                                                                                                                                                                                              930
                                                                                                                                                                                                                                                                                                                                                                         1643
                                                                                                                                                                                                                                                                                                                                                                                                                                    1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1103
                                                                                                                                   1883
                                                                                                                                                                                                                          1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  381
                                              1230
                                                                                                                                                                1110
                                                                                                                                                                                                                                                                                    990
                                                                                                                                                                                                                                                                                                                                                                                                       876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        441
```

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AB014885
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2004
                                                                    polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGGCCACGGGGGGGCCAGCCGTGTTCCAGAAGCCGGTCAAGTTCCAGGTTGATATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCCAGGCACAGCTCCTGAGCACTCATGACCAGCCCTCCGTGCAGGCCCTGGCAGA 2180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCGTCACCTTCACTCTCGGGTCCCAGCCGTCGGTTCAAGCGAGTGGTGGAGAC 2123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCCAGGCCCAGCTGCTGAGCACACACGACCCGCCTGCGGCCCAGCACTTGTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCCGTCACCTTCACCCTGCTCTCAGGCCCCAGCCGTCGCTTCAAGAGGGTGGTGGAGAC 1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACACGGAGGGT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (26-MAY-1998) Yasunori Sasakura, Kyoto University, Department of Zoology, Graduate School of Science; Sakyo-ku, Kyoto 606-8502, Japan (E-mail:sasakura@ascidian.zool.kyoto-u.ac. Tel:+81-75-753-4095, Fax:+81-75-705-1113)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Halocynthia roretzi
Eukaryota; Metazoa; Chordata; Urochordata;
Stolidobranchia; Pyuridae; Halocynthia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Halocynthia roretzi HrPOPK-1 mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Maternally localized RNA encoding a serine/threonine in the ascidian, Halocynthia roretzi Mech. Dev. 76 (1-2), 161-163 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sasakura, Y., Ogasawara, M. and Makabe, K.W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Halocynthia roretzi early embryonic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HrPOPK-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AB014885.1 GI:3172110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sasakura, Y., Ogasawara, M. and Makabe, K.W
    1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 3933)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (sites)
    þ
                                                                                                        VQKGRLIPREARRFFRQIISAVDYCHNHNVCHRDLKPENLLLDEKNNIKVADRGMASL
QPEGFILETSCGSPHYACPEVIRGERYDGRTADVWSGGVILFALLVGALPFDDDNLRQ
LLEKVKRGVYHIPHFVPPDAQNLLRGMIDVRPDKRLSLQQVLCHPWARRGSNSVEGVL
VTPDFVVPVIDCVPLPEEESVDPDVLASMTSLGGFCNKEKLIKNLITERGNTEKVVYY
MLLRRKKRYPSFDDADSLPCKHPDAPRKRVDSTSSLSSSNGDDWCVNFIPQRRMSAE
SLCLTDSSSFILSRKKSTETHQRSQSLTGESNSRLVCNISDDWCVNFIRGENSRINGTPVRR
GTTCSSNGPVPQINTPASPNFHQRLASLKNFTMSVFRAFKRAESKSRINGTPVRR
GTTCSSNGPVPQINTPASPNFHQRLASLKNFTMSVFRAFKRAESKSRINGTPVRR
GTTCSSNGPVPQINTPASPNFHQRLASLKNFTMSVFNGFURAFLSIPNLTRS
SSELSKRSWFGNFMSSRYSSTBHCDRLPYALAYKNFTLNSVKSELVHAFLSIPNLTRS
SSELSKRSWFGNFMSSRYSTFHQRSIFFTINGTPFNLTPHAPPLSIPNLTRS
MVSPTFRCDYRSSRYSTFTSVFHQRSIFFQVDIIQHSSLDRQENGKFSSQTVGSFTI
AFSLLSGPIRTKRSKFTLELLQMQMSIVAANQQNKTSGEFSAFSHEIQOLCKTVNNLHQD
                                                                                                                                                                                                                                                                                                                                  /translation="msnapqpgqyvgpyklektlgkgqyglvklgvhcmtgkkvavki
vnreklsesvinkvereiainkliehhilghdvyenkkylylitelysggeledyl
/note="19 A nucleotides"
803 c 751 g 1241 t
                                                                                          NSTMAINNPNHKSKVK"
                                             /gene="HrPOPK-1"
                                                                                                                                                                                                                                                                                                                                                                                      /protein_id="BAA28663.1"
/db_xref="GI:3172111"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="HrPOPK-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="egg"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Halocynthia roretzi"
/db_xref="taxon:7729"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'dev_stage="early
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tissue_lib="fertilized"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "HrPOPK-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----GGGGAGGCGCAGAAGGAGAACGGCATCTA 1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 embryonic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     egg"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     egg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tissue_lib:fertilized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ascidiacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INV 06-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kyoto,
..ac.jp,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     egg
```

```
2
                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
ORGANISM
  Š
                                                         밁
                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
AF316542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
  245
                                                         322
                                                                                                            185
                                                                                                                                                                  262
                                                                                                                                                                                                                      125
                                                                                                                                                                                                                                                                               202
                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                  TCAAGATCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGA 244
                                                                                                                                                                                         AAGGACAGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCA 184
                                                                                                                                                                                                                                                                                                      CCCACCCACCCAGCACGCCCAATATGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCA 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGTTTTGATGATGATG
TCGCCATCCTGAAGCTCATCGAACACCCCACATGTCCTCAAGCTCCACGACGTCTACGAGA
                                                      TCAAGATAGTCAACAAAGAAAAACTCAGTGAATCTGTTCTACAAAAGGTCGAAAGAGAAA
                                                                                                                                                                                                                                                                            CGCGTCCAGTGGCGCAGGCTCAATATTGCGGTCCATACAAACTTGAGAAGACGCTTGGAA 261
                                                                                                                                                             AAGGTCAAACTGGGTTGGTAAAAACGGGAACTCATTGCATTACGGGCCGTAAAGTGGCAA 321
                                                                                                                                                                                                                                                                                                                                                                                            640;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caenorhabditis elegans.
Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida;
Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF316542 3059 bp mRNA line Caenorhabditis elegans serine/threonine kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (25-OCT-2000) HHMI, UCSF, 0452, San Francisco, CA 94143-0452,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Crump, J.G. and Bargmann, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Crump, J.G., Zhen, M., Jin, Y. and Bargmar The SAD-1 kinase regulates presynaptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF316542.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF316542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 3059) mp, J.G., zhen, M., Jin, Y. and Bargmann, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 3059)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               921
                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="serine/threonine kinase SAD-1"
/product="serine-threonine kinase SAD-1"
/product="serine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threonine-threo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NRYGPSSSSSGSYSNNADYSYHPEYSQRSNGSSAPKNQYSPGSQRSFAFSMFNKADKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Caenorhabditis
/db_xref="taxon:6239"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .3059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:12276121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               653 c
                                                                                                                                                                                                                                                                                                                                                                                                                   16.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1213
                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                   Score 391.2; DB 3; Pred. No. 6.4e-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            712 g
                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   elegans'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Department
USA
                                                                                                                                                                                                                                                                                                                                                                                         393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         vesicle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clustering
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SAD-1 mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                            3059;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Anatomy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INV 18-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                      Ψ
                                                                                                                                                                                                                                                                                                                                                                                      Gaps
  30A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вох
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complete
                                                                                                                                                                                                                                                                                                                                                                                      ۲,
```

```
Š
밁
                         ő
                                                        망
                                                                                                                       В
                                                                                                                                                  δÃ
                                                                                                                                                                                 В
                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                             1076
                                                                                                                        1016
                                                                                          965
                                                                                                                                                       907
                                                                                                                                                                                      956
                                                                                                                                                                                                                   851
                                                                                                                                                                                                                                                   896
                                                                                                                                                                                                                                                                                791
                                                                                                                                                                                                                                                                                                             836
                                                                                                                                                                                                                                                                                                                                           731
                                                                                                                                                                                                                                                                                                                                                                          776
                                                                                                                                                                                                                                                                                                                                                                                                     671
                                                                                                                                                                                                                                                                                                                                                                                                                                      716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                       TGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGA 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCC 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGCCTCCTGGAGACCACCTGCGGGTCCCCCATTATGCGTGTCCAGAGGTGATTAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGTGAACCGGGAGAAGCTGTCGGAGTCGGTGCTGATGAAGGTGGAGCGGGAGATCGCCA 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCCCAGCACGCCCAATAIGTGGGCCCCTATCGGCTGGAGAAGACGCTGGGCAAAGGAC 130
                AGGAGGAGAACCAAGAAAAGATGATATATTATCTGCTTTTGGATCGGAAGGAGCGGTATC 1084
                                                          CCATGACCTCTCGGATGCTTTTGTAATAAGGAGAAACTTCTCAAAAATCTTATTACAG
                                                                                                                                          CGGGTAGCCATGCGAGC--CTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGA
                                                                                                                                                                                                                                                                                                          AACGAGGTGTTTACCACATTCCCCACTTGTTCCTCCCGATGCTCAAAAACCTTCTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTTCTTTTGGAAACTAGTTGTGGGTCCCCCCCCACTATGCTTGTCCTGAAGTTATCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGGTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATATITGTACCTGGTTCTGGAGCACGTCTCGGGGGGTGAGCTATTCGACTACCTGGTAA 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTGAAGCTCATCGAACACCCACATGTCCTCAAGCTCCACGACGATCTACGAGAACAAGA 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACAGGCCTCGTTAAACTCGGTGTTCACTGCATGACTGGGAAGAAAGTAGCCGTCAAAA 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGACAGGGCTGGTTAAACTCGGGGTCCACTGCATCACGGGTCAGAAGGTCGCCATCAAGA 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGCCGCAGCCCGGACAATATGTCGGACCGTACAAGCTGGAAAAGACTTTGGGAAAAGGCC 235
GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTG 1024
                                                                                                                       CGGTGATCGATTGTGTTCCTCTGCCTGAAGAAGAATCCGTTGATCCGGATGTTCTCGCTT 1075
                                                                                                                                                                                  GGATGAGGCCCGGTAGCAATTCCGTCGAAGGAGTCTTGGTGACTCCTGACCCAGTGGTGC
                                                                                                                                                                                                                 GAATGATTGATGTTAGGCCGGACAAGAGGTTGAGTCTACAACAAGTCTTGCAACATCCCT
                                                                                                                                                                                                                                                                             GAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTT 850
                                                                                                                                                                                                                                                                                                                                          AACGGGGCGTCTTCCACATGCCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGG 790
                                                                                                                                                                                                                                                                                                                                                                        TGCTTGTGGGTGCTTTACCATTTGATGATGACAACCTGCGACAGCTTTTGGAGAAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGAGAGGTACGATGGCACACAGCAGATGTGTGGAGTTGTGGAGTTATCTTGTTTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGATGAGAAGAACAACATCAAGGTTGCTGATTTCGGGATGGCGTCACTTCAACCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGATTATTGCCACAATCACAATGTTTGTCACAGAGATCTCAAACCTGAAAACCTTCTCC 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGACTTCTGCCACAGCTACTCCCATCTGCCACAGAGACCTAAAGCCCGAGAACCTGCTTT 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAGGGGAGACTGACGCCCAAGGAGGCCCGGAAAGTTCTTCCGCCAGATTGTGTCTGCGC 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATATCTGTACCTCATCCTGGAATTGGTTTCAGGAGGCGAGTTGTTCGATTATCTCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCATGAAATTGATCGAGCATCCTCATATACTGGGACTACATGATGTTTATGAGAATAAAA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         682;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            350;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                          1135
                                                                                                                                                                                  1015
                                                                                                                                                                                                                 906
                                                                                                                                                                                                                                                                                                                                                                                                                                    775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   535
1195
                                                                                                                                                                                                                                                955
                                                                                                                                                                                                                                                                                                             895
```

Š

1085

CCAGCTGTGAGGACCAGG

1102

Query Match Best Local Similarity

19.18; 65.78;

Score 446; DB 3; Length 3933; Pred. No. 7.7e-71;

```
RESULT 14
AY060288
                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                  끊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                         rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                SOURCE
                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                KEYWORDS
                                                                                                                                                     VERSION
                                                                                                                                                                                          DEFINITION
                                                                                                 ORGANISM
     AUTHORS
                                                                                                                                                                                                                                                                                                      1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              442
                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATGAACTGCTTAGGATGTTTCAAAGACAAACAGAAGTTGATTAATGAATTATTGTCGC 1158
                                                                                                                                                                                                                                                                                                    CTGCACAGGAAGACGA 1234
                                                                                                                                                                                                                                                                                                                                     CCAGCTGTGAGGACCA 1100
                                                                                                                                                                                                                                                                                                                                                                                                AGGAGGAGAACCAAGAAAAGATGATATTATTTATCTTGCTTTTTGGATCGGAAGGAGCGGTATC 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCATGGCATCACTGGGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTG 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTTGTGCAGACGCACGTAATACCTGGTGAAGATTCGATTGATCCGGATGTCTTGAGGC 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCGGGTAGCCATGCGGAGCCTGCCATCCAACGGAGAGCTGGACCCCGACGTCCTAGAGA 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGGGGAATGATCGAAGTGGAGCCCGAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGAAACGTGGAGTTTTCATATCCCACATTTCGTACCTGCTGATGTGCAGAGTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGCATTATTAGTTGGTGCGCTTCCATTTGATGACAATCTCCCGAAATCTTCTCGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCGCTGGACTTCTGCCACAGCTACTCCATCTGCCACAGAGACCCTAAAAGCCCGAGAAACC
                                                                                                                                                                                                                                                                                                                                                                        CAAAACACAACACTGAAAAGATGGTATACTTTCTCCTTCTTGATCGAAAACGACGGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCGGGCAATGATAGAAGTAGACCCGGGGAAACGATATTCCCTAGCCGACGTGTTCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGTGAAACGGGGCGTCTTCCACATGCCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGCCCTGCTCGTGGGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGA 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCGGGGTGAAAAGTACGACGTCGAAAAAGCAGACGTTTGGAGTTGTGGCGTTATCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAAGGGGGAAAAATATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGCTCATCCTCT 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTTTTGGATGAGAAAAACAACATCCGCATTGCAGACTTCGGCATGGCGTCCCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGTGCGGAAAGGACGGCTGATGTCGAAAGAAGCCGCGAAAGTTTTTTCGTCAAATCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCCATGG----GTATCCGGAACAACAAAGGCAGATCCTGAATTGGAGCTTCCAATGTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGAAGGGTCGATGTTGGAGACGAGTTGTGGATCTCCACATTATGCATGTCCAGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGGGACAGCCTCCTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGA 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTACTAGACGAGAGGAATAACATAAAAGTAGCAGATTTTGGAATGGCTAGTCTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCGCTCGATTTTTGCCATGCTCATAACATTTGTCATCGAGATTTAAAAACCGGAAAAACT 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGTAAAGAAGGGGAGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAAGAAATATTTATATTTGCTACTAGAACATGTTAGCGGTGGCGAGCTGTTCGACTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAAGAAATATTTGTACCTGGTTCTGGAGCACGTCTCGGGGGGGTGAGCTATTCGACTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGCAATTATGAAGTTGATAGAGCATCCACATGTGCTTCATTTGTACGATGTCTACGAAA 441
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygo;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 5609)
Stapleton, M., Brokstein, P., Hong, L., Agbayani, A., Carlson,
                                                                                                                                                                    Drosophila melanogaster
AY060288
                                                                                                            Drosophila melanogaster.
                                                                                                                                FLI_CDNA
                                                                                                                                                                                                           AY060288
                                                                                                                                                 AY060288.1 GI:16648123
                                                                                                                                                                                    5609 bp mRNA linea:
GH13047 full length cDNA
Hong, L., Agbayani, A., Carlson, J.,
                                                                     Insecta; Pterygota;
                                                                                                                                                                                                       INV 05-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          501
```

```
ğ
                                                                                                                           명
                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                             Best
                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                  319
                                                                                                                                                                                          259
                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence clones from Brosophila Gene Collection 1 (Rubin et al., Science 2000). The sequence has been subjected to integrity checks for sequence accuracy, presence of a polyA tail and contiguity within 100 kb in the genome. Thus we believe the sequence to reflect accurately this particular cDNA clone. However, there are artifacts associated with the generation of cDNA clones that may have not been detected in our initial analyses such as internal priming, priming from contaminating genomic DNA, retained introns due to reverse transcription of unspliced precursor RNAs, and reverse transcriptase errors that result in single base changes. For further information about this sequence, including its location and relationship to other sequences, please visit our Web site (http://fruitfly.berkeley.edu) or send email to cona@fruitfly.berkeley.edu.
TACCTGGTTCTGGAGCACGTCTCGGGGGGGGTGAGCTATTCGACTACCTGGTAAAGAAGGGG 378
                                                                                                                  CTAATCGATCATCCACACGTCCTTGGCCTGAGCGATGTGTACGAGAACAAGAAGTATTTG 61
                                                                                                                                                                       CTCATCGAACACCCACATGTCCTCAAGCTCCACGACGTCTACGAGAACAAGAAATATTTG 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (29-OCT-2001) Berkeley Drosophila Genome Project, Lawrence Berkeley National Laboratory, One Cyclotron Road, Berkeley, CA 94720, USA Sequence submitted by:
Berkeley Drosophila Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Champe,M., Chavez,C., Dorsett,V., Farfan,D., Frise,E., George,R., Gonzalez,M., Guarin,H., Li,P., Liao,G., Miranda,A., Mungall,C.J., Nunoo,J., Pacleb,J., Paragas,V., Park,S., Phouanenavong,S., Wan,K., Yu,C., Lewis,S.E., Rubin,G.M. and Celniker,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This clone was sequenced as part of a high-throughput process to sequence clones from Drosophila Gene Collection 1 (Rubin et al.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lawrence Berkeley National Laboratory Berkeley, CA 94720
                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                        1803
                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                     D
                                                                                                                                                                                                                                                                                                                                                                                                  HRRKMQVSADEVHLTPESSPELTKRSWEGNLITTEKDETFTILVKGKPIATVKAHLIH
AFLSMAELSHSVVSPTSFRVEYKRNGNGPVMFQRHVKFQVDISAICKQGDIADMLFAL
TFTLLSGNIRRFRRICEHIQSQVCSKRFPGPSSPTVTSVTQAVSESSSGGSVSSERL
SYKRQVIENDMENDS1FSYKSGNGRRASTTNNNNANPVDIPGSPIAVRSNSETAEHER
NRELOSERQATTMSGSAIA"
1224 c 1164 g 1418 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xrefe="FLYBASE: FBgn0036544"

/translation="maslopagsmletsCgsbhyacpevirgekydgrkadvwscgvi
/translation="maslopagsmletsCgsbhyacpevirgekydgrkadvwscgvi
/translation="maslopagsmletsCgsbhyacpedcslleelementyle"
LIALLVGALPEDDDNLRQLLEKVKRGVFHIPHFVPPDCQSLLRGMIENLTDERKITAL
LINRHPWVTAGGKGELELELEMMEVVQTHVIPTATAVDDDVLNALCSLGCEKEKEKLO
ELLSSSHNTEKVLYFLLLERKRRRPALEDDDEIAQKSRSELDAVDPPRKRLDTCRING
TNAPSYGQISEGSPLTPRRQAFNFRSYSSTRNHGRSPTTVSSYRSSSYISPTRCNS
PMSSAQOQAMAISRSESPAAGTRHSTYGDRDNGGHRSVSRTEBHSSQKSIEGDVVVV
REPRIERRDSLRQERGGGSPRDRGDCGIPPGSPGNSSGTSASPSVHHRANSGPTIA
ISMFHDDDSNSVVNDRNGSPMNNNSSGMPGSPCNTPGGQLWFRELTNIKKSFLGSPRF
LSMFHDDDSNSVVNDRNGSPMNNNSSGMPGSPCNTPGGQLWFRELTNIKKSFLGSPRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="alignment with genomic scaffold AE003529"
/db_xref="FLYBASE:FBgn0036544"
272. .2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAL25327.1"
/db_xref="GI:16648124"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="GH13047p"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Longest ORF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="CG6114"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /map="72A5-72B1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Drosophila melanogaster"
/strain="y; cn bw sp"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                          16.0%;
                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                               1164 g
                                                                                                                                                                                                                                                                          Score 373.6; DB 3
Pred. No. 9.2e-58;
                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                   DB 3;
                                                                                                                                                                                                                                                294;
                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                         5609;
                                                                                                                                                                                                                                             ω
••
                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                          ۳.
```

```
₽. Q
                                          JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                               KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                       RESULT 15
AC008974
                                                                                                                                                                                                                                                                                                                                    닭
                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                      REFERENCE
                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                           Snoo
                                                                                        AUTHORS
TITLE
                               TITLE
               JOURNAL
                                                                                                                                                                                                                                                                                                                                                               1099
                                                                                                                                                                                                                                                                                                                                                                                                                          1039
                                                                                                                                                                                                                                                                                                                                    839
                                                                                                                                                                                                                                                                                                                                                                                            779
                                                                                                                                                                                                                                                                                                                                                                                                                                                        719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACTGACGCCCAAGGAGGCCCGAAAGTTCTTCCGCCAGATTGTGTCTGCGCTGGACTTC 438
                                                                                                                                                                                                                                                                                                                                                               CAGGACCTGCCTCCCCGGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGGTCAATCCGGACCGGCGCTCACGCTGGCTGAAATCAACCGGCATCCGTGGGTCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCTTCCACATGCCCCACTTCATTCCTCCAGATTGCCAGAGCCTCCTGAGGGGAATGATC 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGCGTTGCCCTTCGACGACGACAACTTGCGCCCAGCTGCTGGAGAAAGTCAAGCGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGGCTCTGCCCTTTGATGACGACAACCTCCGCCAGCTGCTGGAGAAGGTGAAACGGGGC 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACGATGGCCGCAAGGCGGATGTCTGGGTCCTGTGGGGTCATCCTCTATGCCCTCCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGAGACCTCCTGCGGCAGCCCACACTACGCGTGTCCAGAGGTCATACGGGGCGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGAGACCAGCTGCGGGTCCCCCCATTATGCGTGTCCAGAGGTGATTAAGGGGGAAAAA 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGATTGACGCCGAAGGAGGCGCGCAAGTTCTTCAGGCAAATCATCTCCGCCCTGGATTTC
                                                                                                                                                                                                                                                                                                                                    GATGATGAGATTGCGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                           GAGAAGGTTATATTTCCTGTTGCTCGAGCGCAAACGAAGACGACCTGCGCTGGAGGAT 838
                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAAGATGATATTATCTGCTTTTTGGATCGGAAGGAGCGGTATCCCAGCTGTGAGGAC 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCTGTTTCAAGGAGAAGGAGAAACTCATCCAGGAACTGCTCAGTTCAAGTCACAATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCTGCTTCAGGGACCGCGAGAGGCTGCATCGCGAGCTGCGCAGTGAGGAGGAGAACCAA 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACGTTATTCCCACAGCCACCGCGGTGGATCCGGATGTGTTGAACGCGATTTGCTCGCTG 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGGCGGCAAAGGG---GAGCTGGAGCTGGAGCTGCCAATGATGGAGGTGGTGCAGACA 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCGGGAAACACGAGCCAGACCCGTGCCTGGAGCCAGCCCCTGGCCGCCGGGTAGCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGTGGAGCCCGAAAAAAAGGCTCAGTCTGGAGCAAATTCAGAAACATCCTTGGTACCTA 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCTTTCACATACCGCACTTTGTGCCGCCGGACTGCCAGAGTCTGCTGCGCGGCATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGATGGCCGCCGGGCAGACATGTGGAGCTGTGGAGTCATCCTCTTCGCCCCTGCTCGTG 678
                                                                                                                                                                                                          Homo sapiens chromosome 19
AC008974
AC008974.7 GI:12545283
Submitted (03-AUG-1999) Production Sequence Institute, 2800 Mitchell Drive,
                             Direct Submission
                                          2 (bases 1 to 38000)
DOE Joint Genome Institute.
                                                                         Unpublished
                                                                                                     Eukaryota; Metazoa; Chordata; (Mammalia; Eutheria; Primates; (Dases 1 to 3800))
DOE Joint Genome Institute and
                                                                                          Direct Submission
                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                  sapiens
                                                                                                                                                                                                                                                        38000 bp
                                                                                                                                                                                                                                        00 bp DNA linear PRI 26-JAN-2 clone LLNLF-116A8, complete sequence.
                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                        Stanford
 Sequencing ive, Walnut
                                                                                                        Human Genome
 Facility,
Creek, CA
                                                                                                                                                                                                                                                           PRI 26-JAN-2001
                                                                                                        Center
 DOE Joint
94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
```

Search completed: April 21, Job time: 4079.82 secs

2003, 23:05:39

```
Db
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                               ρy
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                       γg
                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
  밁
                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 371
                                                                                                                                                                                                                                                                                                                33393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33273
                                                                                                                                                                                                                                                                         1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1347
                                                                                                                                                                                                                                                                                                                                                    1467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGTCCGGTCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGG 33332
CAAGATGCAGG
                                      CAAGATGCAGG 1717
                                                                          GCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCAC 1586
                                                                                                                                                                                                                                                                                                                                                                                          CTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGGCCCCCAGGGGTGGGGGCGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                 CTCCCCGACTTCCAAAACGCAGACGCTGCCTTCTCGGGGCCCCCAGGGGTGGGGGCGCCGG 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTCCGGTCTTTTCCTTTTCACCGGAGCCGGGGGCTGGAGATGAGGCTCGAGGCGGGGG 1406
                                                                                                                 GAGGAGTCGTCTCAACTCCATCCGCAACAGCTTCCTGGGCTCCCCTCGCTTTCACCGGCG
                                                                                                                                                                                              CGGGACCCCGGGGACAACACCACCCCCCAGCCCCGGCGGTGGCGTCGGGGGAGCCGCCTG 1646
                                                                                                                                                                                                                                     GCGCTCCTCTGGCGGGACCCCCTTGCACTCGCCTCTGCACACGCCCCGGGCCAGTCCCAC
                                                                                                                                                                                                                                                                                                                GGAGCAGCCCCCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCCAGGCTCCCC
                                                                                                                                                                                                                                                                                                                                                    GGAGCAGCCCCCCCCCCAGTGCCCGCTCCACACCCCTGCCCGGCCCCCCAGGCTCCCC 1526
                                                                                                                                                          CGGGACCCCGGGGACAACACCACCCCCCAGCCCCGGCGGTGGCGTCGGGGGAGCCGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
Submitted (26-JAN-2001) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
On Jan 26, 2001 this sequence version replaced gi:7711382.
Draft Sequence Produced by DOE Joint Genome Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 (bases 1 to 38000)
DOE Joint Genome Institute and Stanford Human Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 www-shgc.stanford.edu
www-shgc.stanford.edu
Quality: Phrap Quality >=40 99.8% of Sequence;
Estimated Total Number of Errors is 0.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Finishing Completed at Stanford Human Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="LLNLF-116A8"
9978 c 10552 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .38000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
  33643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 371; DB 9; ; Pred. No. 2.2e-57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 38000;
                                                                                                                   1706
                                                                                                                                                                                                                                                                                                                33452
                                                                                                                                                                                                                                                                                                                                                                                          33392
                                                                                                                                                          33572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first.45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  v
Ö
        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                             2490.5
2385.5
2385.7
795
795
788
                                            753.5
715.5
700.5
700.5
695
691
599
543.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
522.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MSSGAKEGGGGSPAYHLPHP......PRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us-10-003-690-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       April 16, 2003, 12:29:03;
                                                                                                                                                                                                                                                                                                              19.1
18.3
17.4
17.4
17.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_AA:*
                                            GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
      436
436
1050
353
290
334
1037
1037
260
339
351
                                                                                                                                                                                                                             776
633
345
552
552
257
257
257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
US-09-930-181-2
US-09-930-181-17
US-09-930-181-4
US-09-930-181-4
US-09-523-849-33
US-09-523-849-33
US-09-523-849-33
US-09-523-849-33
US-09-523-849-35
US-09-523-849-35
US-09-101-146-16
US-09-523-849-35
US-09-101-146-6
US-09-523-849-35
US-09-734-673-2
US-09-734-673-3
US-09-734-673-3
US-09-734-673-3
US-09-734-673-3
US-09-734-673-3
US-09-734-673-3
US-09-688-988-3
US-09-688-988-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search time 19 Seconds
(without alignments)
1204.791 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
    Sequence
Sequence
                                                                                  Sequence
Sequence
                                                                                                                                                                                                                                                                 Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
                                            Sequence
                                                                                                                                             Sequence
                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                               Sequence
                                                                                                                            Sequence
                                                                                                                                                                Sequence
                                                                                                                                                                                     Sequence
                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                   33, Appl
32, Appl
34, Appl
43, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                               17, Appl
4, Appli
36, Appl
2, Appli
                                        Appl
Appl
Appl
Appl
Appli
Appli
                                                                                                                                                                                                                                                                                                                             Appli
, Appl
                                                                                                                                                                                                                                                                                                         App1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
```

												•
P &	Ф	Оу	Qу	Qу	Qу	Оy	Ma Ma	US-0				
361	301 285	241 226	181	121 106	61 46		Query Ma Best Loc Matches	SSULT 1  Sequence 2, Sequence 2, Sequence 1, GENERAL INF. GENERAL INF. ITILE REFERI CURRENT API CURRENT FI NUMBER OF SOFTWARE: 1 SEQ ID NO 2 LENGTH: 66 TYPE: PRT ORGANISM: -09-930-181.		4444	& & & & & & & & & & & & & & & & & & &	3 3 3 2 3 2 1 0 9 8
							ntch bal S	IESULT 1  IS-09-930-181-2  Sequence 2, App. Patent NO. 6455. GENERAL INFORMAT APPLICANT: OTIO TITLE OF INVENT FILE REFERENCE CURRENT APPLICI CURRENT FILING NUMBER OF SEQ SOFTWARE: Patel SEQ ID NO 2 LENGTH: 668 TYPE: PRT ORGANISM: HOMO ORGANISM: H		469.5 469.5 469.5 5 67.5	482 477.5 477.5 477.5 477 475.5 474.5	490.5 482.5 482.5 482.5
YPSCEDQDLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRA 	GRRYAMRSLPSNGELDPDYLESMASIGGFRDRERLHRELRSEEENQEKMIYYLLLDRKER  :  :      ::     :           :  :	EKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPA 	QVGDS1LETSCĜSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQ1L 	YLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASL 	AIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELF 	MSSGAKEGGGGSPAYHLPHPHPHPPQHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKV  -   -   -   -   -   -   -   -   -   -	imilari ; Cons			11111111111111111111111111111111111111	11.6 11.6 11.6 11.6	11.9 11.7 11.7 11.7
RNDVDPE	NGELDPI ::    LEDIDPI	HFIPPDO	GSPHYAC	EARKFFI        EARKFFF	ESVLMK\	SPAYHLP	ty ervat	on ech Ful 101 NUM 2 : 1		3222221 399999 399999		260 370 370 370
PRKRVI	STIAC 	QSLLI        	CPEVII        CPEVII	RQIVS    :  RQIIS	/EREI/       /EREI/	энрнрі	68.1%; 75.1%; ive	US/0993018 nnologies 1-Length S VI US/09 0001-08-16 BER: US/09			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	222
OSPMISH	MASLGCE	RGMIEVE      : RGMIEVI	KGEKYDG :             RGEKYDG	ALDFCHS ALDFCHS	AILKLIE AILKLIE	нреднас       Онас	Score Pred. 54; Mi	30181 ss th Serine th Serine 7.709/930,	ALI	08-08- 08-08- 08-08- 08-08- 08-08-	US-09-800-960-4 US-07-857-224B-18 US-08-688-988-30 US-08-688-988-30 US-09-800-960-2 US-07-857-224B-19 US-07-951-715A-23	US-07- US-08- US-09- US-09-
HGKRRE	RDRERI     :  RDRNKI	PEKRLS :     :   AARRLT	RRADMW  :  :   RKADWW	YSICHE:	HPHVLK	QHAQYVGPYRLE             QHAQYVGPYRLE	ore 2799; [ed. No. 8.96 Mismatches	ne Prote	ALIGNMENTS	459-44 459-59 459-50 459-44 459-44	800-96 857-22 857-22 688-98 688-98 800-96 857-22	857-22 878-98 878-79 272-79 457-04
ERKSME	HRELRS	TEUIQE 	SCGVII	DLKPEN 	THOWE THE THE	LEKTLO	DB 4 1.9e-17 1es 4	e S	ั้ง	8A-23 5A-23 4B-23 4-23 2-23	0-4 4B-18 8-32 8-30 0-2 0-2 5A-23	4B-28 19-19 16-19 10B-31 1A-14
VISITI	SEEENOI	KHPWYIC	FALLV	ALLIDEI               XLLIDEI	ENKKYLI HHHH ENKKYLI	KTLGKGQTGLVKLGVHCVTCQ 	8,1,°	Kinase				
DAGGGG	EKMIYY     :	GKHEP       :     GKNEP	SALPED        SALPED	KNNIRI       KNNIRI	KTATEH 	LVKLGV	Length 6 Indels	in Br		ស្រួសស្រួស ស្រួស្រួស្រួស ស្រួស្រួស្រួស	. x x x x x x x x x x x x x x x x x x x	0 0 0 0 0 0 0 0 0 0
SPVPTR	LLLDRK        LLLDRK	DPCLEPAP    :   EP-EQPIP	DDNLRQ        DDNLRQ	ADFGMA:        ADFGMA:	VSGGEL	HCTTGQ:	68; 80;	ain and		quence quence quence quence	sequence sequence sequence sequence sequence	equence equence equence equence
RA 420	ER 360    ER 343	AP 300   IP 284	LL 240    LL 225	18 16	D 12	KV 60	Gaps	d Panc		222222	118	28 19 31 14
> 0	ω 0	<b>+</b> 0	vi 0	σö	σο		80	creas	,	Appl Appl Appl Appl Appl Appl Appl	Appli Appl Appl Appl Appli Appli Appli	Appl Appl Appl Appl Appl

밁

344 YPSQEDEDLPPRNEIDPPRKRVDSPMLNRHGKRRPERKSMEVLSVTD---GGSPVPARRA 400

ч
ag
æ
N

	_	= - = -
347TPVHTPXE		
Db 307 DGGSPVPARRAIEMAQHGQRSRSISGASSGLSTSPLSSPR346 Ov 467 GGGSPTSKTOTLPSRGPRGGGAGFODPDPARAPSTDLBGBDGSPBSGGGTDLHSDLUTDDA 526	71	387 LSRHGKRRPERKSMEYLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSPLS 446
QY 407 DAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEAR 466		GCFRDRNKLLQDLLSEEENQEKMIYFLLLDRKERYPSQEDEDLPPRNEIDPPRKRVDSPM
QY 347 EKMIYYILLDRKERYPSCEDODIPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSTT 406		
287 GGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQ		121 YDGRRADVWGCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMS 180
		YDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMI
		61 CHSHSICHRDEKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIRGEK 120
THE TAX AND THE STREET OF THE		CHSYSICHRDLKPENLLLDEKNNIRIADEGMASLQVGDSLLETSCGSPHYACPEVIKGEK
9 YUNTUTANEGARA SIJAWASI PERGOSBHYANDEVIKSEVINGEBANAKSONIT BATTU		87 LIEHPHVLKLHDVYENKKYLYLVLHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDF 146
QY 107 YLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSVSICHRDLKDENLLLDE 166	•	ches 488; Conservative 52; Mismatches 45; Indels 85; Gaps 9;
Query Match 58.1%; Score 2385.5; DB 4; Length 585; Best Local Similarity 74.4%; Pred. No. 1.7e-144; Matches 464; Conservative 51; Mismatches 44; Indels 65; Gaps 7;		17 60.6%; Score 2490.5; DB
US-09-930-181-4	<del></del>	RGANISM: Homo sapiens
		)3 1
; SEQ ID NO 4		MBER OF SEQ ID NOS: 18
; NUMBER OF SEQ ID NOS: 18  • CORMENDED DATE: NOS: 18		TRRENT APPLICATION NUMBER: US/09/930,181
; FILE REFERENCE: 15U 101 V1 ; CURRENT APPLICATION UNDER: US/09/930,181 . CHEBERUM ETIING DAME: 2001.08-16		TELLANT: Officene Technologies TLE REFERENCE: 16U 101 V1
; APPLICANT: Origene Technologies ; TITLE OF INVENTION: Full-Length Serine Protein Kinase in Brain and Pancreas		DELTANT: Origina Technologica
PARENT NO. 6455292 ; GENERAL INFORMATION:	-	vence 17.1, Application US/09930181
US-09-930-181-4 ; Sequence 4, Application US/09930181	<del></del>	T 2
RESULT 3		641 AAQHLSDTTN 650
Db 578 PPPAPGLS 585		SVQALADEKN
Qy 747 PPGRPDPELS 756		587 VKFQVDITYTEGGEAQKENGIYSVTFTLLSGPSRFKRVVETIQAQLLSTHDPP 640
		661 VRFQVDISSSEGPEPSPRRDGSGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQP 720
TLISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQP		527 SLEKEEQIFVVIKDKPLSSIKADIVHAFLSIPSLSHSVISQTSFRAEYKATGGPAVFQKP 586
CY 02/ AFLS IPSLSHSYLSYTSPERAEYKANGGENFYKEVYDLISSSEGPENSPERIDGSGGG 686		
422 HRRKLQVPTPEEMSNLTPESSPELAKKSWFGNFISLEKEEQIFVVIKDKPLSSIKADIVH		D41 GGGVGGAAWKSKLNSIRNSFLGSPREHRIKMQVPTAEEMSSITPESSPELAKRSWFGNFI 600  A60GVGGVDMAAAINGTENSFIGSPREHRIKMQVPTAEEMSSITPESSPELAKRSWFGNFI 600  A60GVGGVDMAAAINGTENSFIGSPREHRIKMQVPTAEEMSSITPESSPELAKRSWFGNFI 600
567 HRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQIFLVLKDKPLSSIKADIVH	·	TPVHTPKESPAGTPNPTPPSSP
Db 375 GPPHTPKESPAGTPNPTPPSSPSVGGVPWRARLNSIKNSELGSPRF 421		RGPRGGAGEQPPPDSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPPSP
QY 507 GSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPBSPGGGVGGAAWRSRLNSIRNSFLGSPRF 566		401 IEMAQHGQRSRSISGASSGLSTSPLSSPR
Db 356 SPR 374		421 LEMAQHSQRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPS 480
-2.rai Page 2	0-003-690-	e Apr 22 09:15:30 2003 us-1
	1.	

₽ <b>Ş</b>	421	LEMAQHSQRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPS 41	N) m
유 정	481 R	GPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSP 5	~ ~
ν	541 G	GGVGGAAWRSRLNSIRNSFLGSPREHRRKMQVPTAEEMSSLTDESSPELAKRSWFGNFI 6	$\sim$
B	469 -	-SVGGVPWRARLNSIKNSFLGSPRFHRRKLQVPTPEEMSNLTPESSPELAKKSWFGNFI 5	
, b	601 s	LDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKP 6	
Ϋ́C	61	SGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQP 7	* 1 /
B	587 1	VKFQVDITYTEGGEAQKENGIYSVTFTLLSGPSRFKRVVETIQAQLLSTHDPP 6	-
Ϋ́	721 :	SVQALADEKN 730	
₽.	641	AQHLSDTIN 650	
GENTLAND SERVING SERVI	09-930-: eequence atent Ne EENERAL ARPLICAL TITLE OI FILE RE CURRENT OFFARI OFFARI OFFARI O9-930	ESULT 2 S-09-930-181-17 S-09-930-181-17 S-09-930-181-17 Sequence 17, Application US/09930181 Patent No. 6455292 GEMERAL INFORMATION: Full-Length Serine Protein Kinase in Brain and Par TITLE OF INVENTION: Full-Length Serine Protein Kinase in Brain and Par FILE REFERENCE: 16U 101 V1 CURRENT FILING DATE: US/09/930,181 CURRENT FILING DATE: 2001-08-16 NUMBER OF SEQ ID NOS: 18 SOFTWARE: Patentin version 3.0 SEQ ID NO 17 LENGTH: 603 TYPE: PRT ORGANISM: Homo sapiens S-09-930-181-17	-
Que Bes Mat	ery Mat st Loca cches	ch 60.6%; Score 2490.5; DB 4; Length 603; il Similarity 72.8%; Pred. No. 3.6e-151; 488; Conservative 52; Mismatches 45; Indels 85; Gaps	CO.
8 5	87 J 1 J	LIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDF 14 	~ ~
8 5	147 ( 61 (	CHSYSICHRDLKPENLLLDEKNNIRIADEGMASLQVGDSLLETSCGSPHYACPEVIKGEK 20	N O
Ϋ́	207 )	RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMI 2	õ
ğ	121	YDGRKADVWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMS 18	œ
8 8	267 H	EVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 32   : :  :           :  :  :       :  :    ::     :      EVDAARRLTLEHIQKHIWYIGGKNEPEP-EQPIP-RKVQIRSLPSLEDIDPDVLDSMHSL 23	ω Ki
₽ <del>X</del>	327 ( 239 (	GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPM 38	9 8
8 8	387 I 299 I	LSRHGKRRÞERKSMEVLSITDAGGGGSÞVÞTRRALEMAQHSQRSRSVSGASTGLSSSÞLS 44  -	UI A

```
US-09-523-849-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                            밁
                                                                                                                                             õ
                                                                                                                                                                                     В
                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-523-849-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/523,849
CURRENT FILING DATE: 2000-03-13
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PERL Program
SEQ ID NO 36
LENCTH: 745
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. 6458561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Bandman, Olga
APPLICANT: Molteni, Angela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: HUMAN NIM1 KINASE FILE REFERENCE: PC-0009 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Scacheri, Emanuela
APPLICANT: Isacchi, Antonella
APPLICANT: Hodgson, Dave
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Magnaghi, Paola APPLICANT: Bosotti, Roberta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: GenBank Accession No. 6458561 g1749794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                136
 377
                                     303
                                                                        327
                                                                                                                                                                                     196 PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       372
                                                                                                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                                                                                                                                                                                     30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match 20.1%; Score 827; DB 4; Local Similarity 30.9%; Pred. No. 4.5e-45;
                                                                                                                                                                                                             RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                           HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ETIQAQLLSTHDQPSVQALADEKN 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G--YTREEIQDSLVGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAQFPS
                                                                                                                                                                                                                                                              KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                               YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                  HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EYKATGGPAVFQKPVKFQVDITYTEGGEAQKE-----NGIYSVTFTLLSGPSRRFKRVV 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVV 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPELAKKSWFGNFISLEKEEQIFVVIKDKPLSSIKADIVHAFLSIPSLSHSVISQTSFRA 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPELAKRSWFGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRA 646
                                                                      GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD------
                                                                                                            PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM
                                                                                                                                             PEKRLSLEQIQKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 326
                                                                                                                                                                                                                                                                                                                                       HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYCHQ 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/09523849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114; Mismatches 259; Indels 176;
--RRPE-----RKSM-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 745;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                            302
400
                                   359
                                                                                                                                                                                     255
                                                                                                                                                                                                                                                              195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
US-08-677-298-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
US-08-677-298-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/08677298 Patent No. 5863729 GENERAL INFORMATION:
                                                                           TELEFAX: (303) 499-808
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 729 amino acids
                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: CATUTHER: Jennie M.
REGISTRATION NUMBER: 34,464
REFERENCE/DOCKET NUMBER: 9-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Piwnica-Worms, Helen
TITLE OF INVENTION: DNA SEQUENCES ENCODING HUMAN TCAK-1
TITLE OF INVENTION: KINASE
                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                 MOLECULE TYPE:
                                                                                                                                                                  TELECOMMUNICATION INFORMATION: TELEPHONE: (303) 499-8080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            584 ASPSGHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVETLRPHVVGSGGNDKEK 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         484 --- RGGGAGEQ---PPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPP 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360 HKVQRSVSANPKQRRFSDQAGPAIPTSNSYSKKTQSNNAENKRPEEDRESGRKASSTAKV 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  730 MAFKNIASKIANEL 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          700 RRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/O FILING DATE: 09-JUL-1996 CLASSIFICATION: 536
                                                          TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 80303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Boulder
                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NISSSGGAPDRINFPRGVSSRSTFHAGQLRQVRDQQNLPY------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PASPLPGLERKKTTPTPSTNSVLSTSTNRSRNSPLLERASLGQASIQNGKDSLTMPGSRA 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPS 699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSELHEKYMLL--CMHGTP 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----ESSPELAKRSW-FGNFTSLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVL 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEE-MSSLTP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STASASAAVSAARPRQHQKSMSASVHPNKASGLPPTESNCEVPRPSTAPQRVPVASPSAH 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STGLSSSPLSSPR-----SPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGP------ 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Greenlee, Winner and Sullivan, P.C. 5370 Manhattan Circle, Suite 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                  PatentIn Release #1.0, Version #1.30
                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----EVLSITDAGGGGSPVPTRRALEMA--QHSQRSRSVSG--A 436
                                                                                                                                              499-8089
                                                                                                                                                                                                                                                                                                                                        US/08/677, 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VQWEMEVCK-----LPRLSLNG----
                                                                                                                                                                                                             9-96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -VRFKRISGTS 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -GVT-P 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      584
```

Query Match

19.48;

Score

795;

DB 2;

Best

28;

```
US-09-523-849-33
Sequence 33, Application US/09523849
Patent No. 6458561
GENERAL INFORMATION:
                                                           APPLICANT: Bandman, Olga
APPLICANT: Molteni, Angela
APPLICANT: Magnaghi, Paola
APPLICANT: Bosotti, Roberta
APPLICANT: Scacheri, Emanuela
APPLICANT: Isacchi, Antonella
APPLICANT: Hodgson, Dave
TITLE OF INVENTION: HUMAN NIM1 KINASE
FILE REFERENCE: PC-0009 US
CURRENT APPLICATION NUMBER: US/09/523,849
CURRENT FILING DATE: 2000-03-13
NUMBER OF SEQ ID NOS: 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      486
                                                                                                                                                                                                                                                                                                                                                                                                              704
                                                                                                                                                                                                                                                                                                                                                                                                                                                        684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384 LAKVRPSSDLNNSTGOSPHHKVQRSVSSSQKQRR-----YSDHAGPAIPSVVAYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434 KRSQTSTADGDLKEDGISSRKSSGSAVGGKG---IAPASPMLGNASNPNKADIPE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              324 ASLGCFRDRERLHRELRSEEENQE---KMIY-----YLLLDRKERYPSCEDQD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         232 PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKRFLVLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YSICHRDLKPENLLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGIYSVTFTLISGPSRRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RKKSSTVPSSNTASGGM-----TRRNTYV----CSERTTADR--HSVIQNGKENST-I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KRIVHRDLKAENLLLDADMNIKIADFGFSNEFTVGGKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPELAKRS-----WFGNFIS-LDKEEQIFLVLKD-----KPLS-----SIK-----AD
                                                                                                                                                                                                                                                                                                                                                                                                            -----VRFKRISGTSIAFKNIASKIANEL 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MMREIRKVLDANNCDYEQRE-RFLLFCVHGDGHAENLVQWEMEVCK---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TPLSQTRSRGSTNLFSKLTSKLTRSRNVSAEQKDENKEAKPRSLRFTWSMKTTSSMDPGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PGTTPPPSPGGGVGGAAWRSRL-----NSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TSKTQTLPSRGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRRALEMAQHSQR-----SRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---LPPRNDVD----PPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSP----VP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VGMG------YSQEETQESLSKMKYDETTATYLLLGRKSSELDASDSSSSSNLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEKRLSLEQIQKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGEL----DPDVLESM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HIGNYRLLKTIGKGNFAKVKLARHILTGREVAIKIIDKTQLNPTSLQKLFREVRIMKILN 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PDQRTPVASTHSISSAATPDRIRFPRGTASRSTFHGQPR-ERRTATYNGPPASPSLSHEA 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIKRGTLEQIMKDRWINAG-HEEDELKPFVEP------ELDISDQKRIDIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HPHVLKLHDVYENKKYLYLVLEHVSGGELEDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cl Similarity
239; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative 109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 4.8e-43;
q: Mismatches 262; Indels 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -LPRLSLNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
                                                                                   RESULT 7
US-09-523-849-32
                                                                                                                                                                           밁
                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                S
S
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; FEATURE:
; NAME/KBY: misc_feature
; OTHER INFORMATION: GenBank Accession No. 6458561 g3089349
US-09-523-849-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; SOFTWARE: PERL Program
SEQ ID NO 33
: LENGTH: 729
: TYPE: PRT
: ORGANISM: Homo sapiens
  GENERAL INFORMATION: APPLICANT: Bandman,
                                         Sequence 32, Application US/09523849 Patent No. 6458561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  472 TSKTQTLPSRGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGT 531
                                                                                                                                                                           704
                                                                                                                                                                                                                 684
                                                                                                                                                                                                                                                                                                                                                                                                                                532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              434 KRSQTSTADGDLKEDGISSRKSSGSAVGGKG---IAPASPMLGNASNPNKADIPE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384 LAKVRPSSDLNNSTGQSPHHKVQRSVSSSQKQRR-----YSDHAGPAIPSVVAYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           324 ASLGCFRDRERLHRELRSEEENQE---KMIY-----YLLLDRKERYPSCEDQD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE
::| ||| ||:||| ||| ||:||||||::: :|: :| |: ||: ||:|::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                               GGGIYSVTFTLISGPSRRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KRIVHRDLKAENLLLDADMNIKIADFGFSNEFTVGGKLDTFCGSPPVAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RKKSSTVPSSNTASGGM-----TRRNTYV----CSERTTADR--HSVIQNGKENST-I 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---LPPRNDVD-----PPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSP----VP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
||:::|| :| | :| |||::|: ||||:|||| ||: ||| |||||: ||
|HPNIVKLFEVIETEKTLYLIMEYASGGEVFDYLVAHGRMKEKEARSKFRQIVSAVQYCHQ 171
                                                                                                                                                                       -----VRFKRISGTSIAFKNIASKIANEL 727
                                                                                                                                                                                                                                                                                                IVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSG 683
                                                                                                                                                                                                                                                                                                                                                                                                                         PDQRTPVASTHSISSAATPDRIRFPRGTASRSTFHGQPR-ERRTATYNGPPASPSLSHEA 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENULKRFLVLN 291
                                                                                                                                                                                                                                                        MMREIRKVLDANNCDYEQRE-RFLLFCVHGDGHAENLVQWEMEVCK---
                                                                                                                                                                                                                                                                                                                                          TPLSQTRSRGSTNLFSKLTSKLTRSRNVSAEQKDENKEAKPRSLRFTWSMKTTSSMDPGD
                                                                                                                                                                                                                                                                                                                                                                               SPELAKRS-----WFGNFIS-LDKEEQIFLVLKD-----KPLS-----SIK-----AD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRRALEMAQHSQR-----SRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSP 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VGMG-----YSQEEIQESLSKMKYDEITATYLLLGRKSSELDASDSSSSSNLS 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIKRGTLEQIMKDRWINAG-HEEDELKPFVEP------ELDISDQKRIDIM 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEKRLSLEQIQKHPWYLGGKHEPD---PCLEPAPGRRVAMRSLPSNGEL---DPDVLESM 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HIGNYRLLKTIGKONFAKVKLARHILTGREVAIKIIDKTQLNPTSLQKLEREVRIMKILN 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PGTTPPPSPGGGVGGAAWRSRL-----NSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative 109;
  Olga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.4%; Score 795; DB 4;
31.9%; Pred. No. 4.8e-43;
vative 109; Mismatches 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 729;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels 140;
                                                                                                                                                                                                                                                        -LPRLSLNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                          650
                                                                                                                                                                                                                                                        703
                                                                                                                                                                                                                                                                                                                                                                                  623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   89
```

Š Ъ δõ В δĀ g Š 밁 õ 밁 Š 밁 Ş В Š 밁 δõ 밁 Q В Š 멁 Š ₽ Š

```
APPLICANT: Bosotti, Roberta
APPLICANT: Scacheri, Emanuela
APPLICANT: Scacheri, Emanuela
APPLICANT: Hodgon, Dave
TITLE OF INVENTION: HUMAN NIMI KINASE
FILE REFERENCE: PC-009 US
CURRENT APPLICATION NUMBER: US/09/523,849
CURRENT FILING DATE: 2000-03-13
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PERL PROGRAM: SEQ ID NO 32
LENGTH: 793
TYPE: PRT
ORGANISM: Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                      Š
                                                                                                                                                                          밁
                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; NAME/KEY: misc_feature
; OTHER INFORMATION: GenBank Accession No.
US-09-523-849-32
    밁
                                          ð
                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Molteni, Angela APPLICANT: Magnaghi, Paola
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
613 TFHGEQLRERRSAAYSGPPASPSHDTAALAHARRGTSTGIISKITSKFVR---
                                                                                                                                                                            554
                                                                                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                                                                  449
                                                                                                                                                                                                                                                                                                                                                                                          425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176 KCIVHRDLKAENLLLDADMNIKIADFGFSNEFTVGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                          505 YVCERSTDRYAALQ-----NGRDSSLTEMSASSMSSTGSTVAS-----AGPSARPRHQK 553
                                                                                                                                                                                                                                                                                                                                                                                                                                     399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        296 PIKRGSLEQIMKDRWMNVGHEEEELKPYSEP-----ELDLN---DAKRIDIMVTMG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             236 PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRVPFYMSTDCENLLKKLLVLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150 YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   116 HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYCHQ 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match 19.2%; Score 788; DB 4; Local Similarity 30.2%; Pred. No. 1.5e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         56 HIGNYRLQKTIGKGNFAKVKLARHVLTGREVAVKIIDKTQLNPTSLQKLFREVRIMKILN 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCED------QDLPPRNDVD- 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RRADMWSCGVILFALLYGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                   TLPSRGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTP 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FARD - - EINDALVSQKYD - EVMATYILLGRKP - - PEFEGGESLSSGNLCQRSRPSSDLNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEKRLSLEQIQKHPWYLGGKHEPD--PCLEPAPGRRVAMRSLPSNGELDPDVLESMASLG
                                          VFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFT-LISGPSRRFKRVVETIQAQLL 714
                                                                                                                           GNFISLDKEEQIFLYLKDKPLSSIKADIVHAFLSIPSLSHSYLSQTSFRAEY-KASGGPS
                                                                                                                                                                                                                  PPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWF 596
                                                                                                                                                                                                                                                                                                                                                QKEEWDKDTARRLGSTTVGSKSEVTASPLVGPDRKKSSAGP----SNNVYSGGSMTRRNT 504
                                                                                                                                                                                                                                                                                                                                                                                      QHSQRSRSVS------GASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQ 476
                                                                                                                                                                                                                                                                                                                                                                                                                                  STLQSPAHLKVQRSISANQKQRR-----FSDHAGPSIPPAVSYTKRPQANSVESE 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----PPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPV-----PTRRALEMA 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative 113; Mismatches 251; Indels 176;
                                                                                     ---VPAAS------PS-AHSISASTPDRTRFPRGSSSRS
                                                                                                                                                                          ---HPIKVTLPTIKDGSE---AYRPGTAQR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6458561 g2052189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 793;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
  662
                                                                                                                               655
                                                                                     612
                                                                                                                                                                          583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                235
```

24;

```
APPLICANT: Bandman, Olga
APPLICANT: Magnaghi, Paola
APPLICANT: Magnaghi, Paola
APPLICANT: Magnaghi, Paola
APPLICANT: Bosotti, Roberta
APPLICANT: Scacheri, Emanuela
APPLICANT: Isacchi, Antonella
APPLICANT: Hodgson, Dave
TITLE OF INVENTION INMAER: US/09/523,849
CURRENT APPLICATION NUMBER: US/09/523,849
CURRENT FILING DATE: 2000-03-13
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PERL Program
SEQ ID NO 34
LENGTH: 776
TYPE: PRT
ORGANISM: Rattus norvegicus
FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: GenBank Accession No. 6458561 g5672676
                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                     Ş
                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
Ş
                                            밁
                                                                                     Ş
                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-523-849-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 34, Application US/09523849 Patent No. 6458561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
  539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     715
                                                                                                                                                                       442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      204 QLDIWSLGVVLYVLVCGSLEFDGPNLPTLRQRVLEGRFRIPFFMSQDCETLIRRNLVVDP
                                                                                                                               414
                                                                                                                                                                                                                  368
                                                                                                                                                                                                                                                             390
                                                                                                                                                                                                                                                                                                                                                                                        264
                                                                                                                                                                                                                                                                                                                                                                                                                                  271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151 SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEH 90
  ----SPGGGVGGAAWRSRLNS---
                                                                                  GEQPPPPSARSTPLPGPPGSPRSSGGTPLH-SPLHTP-----RASPT-GTPGTTPPP 538
                                                                                                                           SSLQPLFFPLDTNCSGVFRHRSISPSSLLDTAISEEARQGPSLEEEQEV------
                                                                                                                                                                     SS-----PLSSPRSPVF---SFSP----EPGAGDEARGGGSPTSKTQTLPSRGPRGGGA 488
                                                                                                                                                                                                                ---RNSDLSSLEV------PQEILPCDPFRPSLLCPQPQALAQSVLQAEIDCDLH
                                                                                                                                                                                                                                                        HGKRRPERKSMEVLSITDAGGGGSPV-----PTRRALEMAQHSQRSRSVSGA--STGLS
                                                                                                                                                                                                                                                                                                                                           RDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLSR 389
                                                                                                                                                                                                                                                                                                                                                                                      AKRITIAQIRQHRWM-----QADPTLLQQDDPAFSMQGYTSNLGDYNEQVLGIMQALGI-
                                                                                                                                                                                                                                                                                                                                                                                                                                EKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSN-GELDPDVLESMASLGCF 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HIVHRDLKTENLLLDGNMDIKLADFGFGNFYKPGEPLSTWCGSPPYAAPEVFEGKEYEGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PNIIKLYQVMETKDMLYIVTEFAKNGEMFDYLTSNGHLSENEARKKFWQILSAVEYCHNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSY 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGFYDVERTLGKGNFAVVKLARHRVTKTQVAIKIIDKTRLDSSNLEKIYREVQLMKLLNH 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STHDQPSVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKK 768
                                          -----QEPLPGSTGRRHTLAEVSTHFSPLNPPCIIVSSSAAVSPSEGTSSDSCLP
                                                                                                                                                                                                                                                                                                   -DRQRTVESLQNSSYNHFAAIYYLLLERLREHRSTQ-----PSSRATPAPAR--QPQL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19.1%; Score 784; DB 4; Length 776; ilarity 30.5%; Pred. No. 2.6e-42; Conservative 104; Mismatches 257; Indels 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----RDPSEGEAS----
-- IRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSP 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---GRTDTARGSS---GEPKDKE 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                          512
                                                                                                                                                                                                                413
                                                                                                                                                                                                                                                          441
                                                                                                                                                                                                                                                                                                   367
                                                                                                                             462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   143
                                                                                                                                                                                                                                                                                                                                                                                      317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             263
```

28;

KVDLPEYLL 315	(LGGKHE 291	CRRLPFDDE 255	SEHLNYKIAD 195	5=B %	CLYLVLEHVS 114	ELVKLGVHCI 55	93; Gaps 14;	1 633;							PROTEIN KINASE					QLSPVPY 685	TRPAGAPPR 742	PSSGLQG 640	PSPRRDGSGG 684	606	:     QAGLGATVLP 566 KPLSSIKADI 624
l oy	dα	Qy	Оу	2 111 0	, , , ,		. 31 31											RES		VQ	фb	Qy	Db	, l oy	ОУ
151 SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210	72 PHIIKLYQVISTPSDIFMVMEYVSGGELFDYICKNGRLDEKESRRLFQQILSGVDYCHRH 131	91 PHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSY 150	31 VGPYRLEKTLGRGOTGLYKLGVHGOTTGGKVAJKITUREKLSESVLMKVERETAILKLIEH 90 	atch 17.4%; Score 715.5; DB 3; Length 345; cal Similarity 40.7%; Pred. No. 2.3e-38; langth 243; Gaps 146; Conservative 65; Mismatches 105; Indels 43; Gaps	TYPE: AMILIO ACIG TOPOLOGY: Linear -09-101-146-1	SEQUENCE CHARACTERISTICS:  LENGTH: 345  LENGTH: 345	TELEPHONE: (856) 810-1515 TELEFAX: (856) 810-1454	REGISTRATION NUMBER: 32,257 REFERENCE/DOCKET NUMBER: DC-0050 TELECOMMUNICATION INFORMATION:	APPLICATION NUMBER: PN7450 FILING DATE: 8 JAN 1996 ATTORNEY/AGENT INFORMATION:	FILING DATE: October 7, 1998 CLASSIFICATION: 435 PRIOR APPLICATION DATA:	SUFIWARE: WUKUPERFECT 6.0 FOR WINDOWS CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/101,146	COMPUTER: IBM PC OPERATING SYSTEM: WINDOWS 95	EBS	H E	HOO	APPLICANT: Medical Research, Kemp et al.  TITLE OF INVENTION: No. 6124125el AMP Activated Protein Kinase  NUMBER OF SEQUENCES: 64	24125  CANTION:  Dartmouth College St Vincents Institute	RESULT 10 US-09-101-146-1 : Sequence 1. Application US/09101146	471 PTSLPQIHRANMLAQGSPAASKISPL 496	437 STGLSSSPLSSPRSPV 452	: : : : : : : : : : : : : : : : : : :	381 RVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGA 436	:   ELDTFLSQSPPTFQQQSKSHQKS	345NQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRK 380	292 -PDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEE 344
				<u></u>																					

₽ ₹	8 8 8 8	, A 5	8 5		S								G RE	8	Ϋ́	8	Ş	문	Ą	윤 .	2	윧
235 256	136 175 196	56 77	14 17	Query Matc Best Local Matches 1	NAME/KEY: LOCATION: OTHER INFO -08-557-006	TYPE: PRT ORGANISM:	SOFTWARE:	PRIOR I		Z Z Z	пнн	Sequence Patent N GENERAL APPLICA	RESULT 9 US-08-557-	686	743	641	685		625			513
NLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKKLSLEQIQKHPWYLGGKHE 291 ::   ::   ::   ::   ::   ::   ::   ::	GGELEVYLVKKGHTPKEAKKFKQIVSALDFCHSYSICHRUKPENLLLDEKNNIRIAD 174  [		AYHLPHPHPHPPOHAQYVGPYRLEKTLGKGQTGLVKLGVHCI 55 ::	Match 18.3%; Score 753.5; DB 4; Length 633; ocal Similarity 32.8%; Pred. No. 1.8e-40; s 166; Conservative 103; Mismatches 144; Indels 93; Gaps	KEY: PEPTIDE ION: (1)(633) INFORMATION: Yeast SNF1 polypeptide	4: 633 PRT ISM: Yeast	ີລ ຜິ	ING DATE: 1993 LICATION NUMBER	1994 - NUMBER:	PERENCE: NGAP/PHM3; APPLICATION NUMBER; FILING DATE: 1996-	Carli Forde NVENTIO	43, o. 6; INFOI	-006C-43	VLTPCDG 692	SLQPPPG 749		GGIYSVTETLISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPR 742	PSSGLQG 6	VHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGG 684	VSFQEGRRASDTSLTQGLKAFRQQLKKNARTKGFLGLNK	TST.DKEEOTELVI.KDKBI.SSTKADI.	FSASEGPAGIGGGLATPGLLGTSSPVRLASPFLGSOSATPVLOSOAGIGATVLP 566

DЪ

```
US-08-557-006C-40; Sequence 40, Application US/08557006C; Patent No. 6258547
                                                                                                                                           밁
                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
  S
                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-557-006C-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Pat
SEQ ID NO 40
LENGTH: 552
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Carling, David
APPLICANT: Forder, Robert A.
APPLICANT: Forder, Robert A.
TITLE OF INVENTION: NUCLEIC ACID ENCODING AMP-ACTIVATED PROTEIN KINASE
FILE REFERENCE: NCAP/PHH37588/UST
CURRENT APPLICATION NUMBER: US/08/557,006C
CURRENT FILING DATE: 1996-03-06
PRIOR APPLICATION NUMBER: PCT/GB94/01093
PRIOR FILING DATE: 1994-05-20
PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR PRIOR APPLICATION NUMBER: GB 9310489.1
PRIOR FILING DATE: 1993-05-21
PRIOR FILING DATE: 1993-05-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: GB PRIOR FILING DATE: 1993-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: gene
LOCATION: (1)..(1747)
LOCATION: (1)..(1747)
OTHER INFORMATION: Full length cDNA sequence fragment of Human AMPK
OTHER INFORMATION: fragment begins at nucleotide 24 and ends with
OTHER INFORMATION: nucleotide 1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Rat
  330
                                                                                                                                                193
                                                                                                                                                                                                                                            133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        252
                                                 253
                                                                                                                                                                                                                                                                                        150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         287 DDEALKEVCEKFECSEEEVLSCLYNRNHQDPLAVAYHLIIDNRRIMNEAKDFYLATSPP 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              211 RADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEP 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               132 MVVHRDLKPENVLLDAHMNAKIADFGLSNMMSDGEFLRTSCGSPNYAAPEVISGRLYAGP 191
                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                    13
                                                                                                                                                                                                                                                                                                                                                                                    90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                  YSICHRDIKPENLILLDEKNNIRIADFGMASIQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                 MKRATIKDIREHEWF --- KQDLPKYLFPE---
RDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDL---PPRNDVDPPRKRVDSPM 386
                                                                                           PEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCF 329
                                                                                                                                           PEVDIWSCGVILYALLCGTLPFDDEHVPTLFKKIRGGVFYIPEYLNRSIATLLMHMLQVD 252
                                                                                                                                                                                                                                       HMVVHRDLKPENVLLDAQMNAKIADFGLSNMMSDGEFLRTSCGSPNYAAPEVISGRLYAG 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKL-SESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DRERLHRELRSEEENQEKMI--------YYLLLDRKERYPSCEDQDL---PP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFR 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EVDIWSSGVILYALLCGTLPFDDDHVPTLFKKICDGIFYTPQYLNPSVISLLKHMLQVDP 251
                                            PLKRATIKDIREHEWF---KQDLPSYLFPED-----PSYDANVIDDEAVKEVCEKFEC- 302
                                                                                                                                                                                       RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                     HPHIIKLYQVISTPTDFFMVMEYVSGGELFDYICKHGRVEEVEARRLFQQILSAVDYCHR 132
                                                                                                                                                                                                                                                                                                                                                                                  HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Beri,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rajindar K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.4%; Score 715; DB 4; Length 552; 40.7%; Pred. No. 4.3e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GB 9318010.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71; Mismatches 134; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----DPSYSSTMI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     286
```

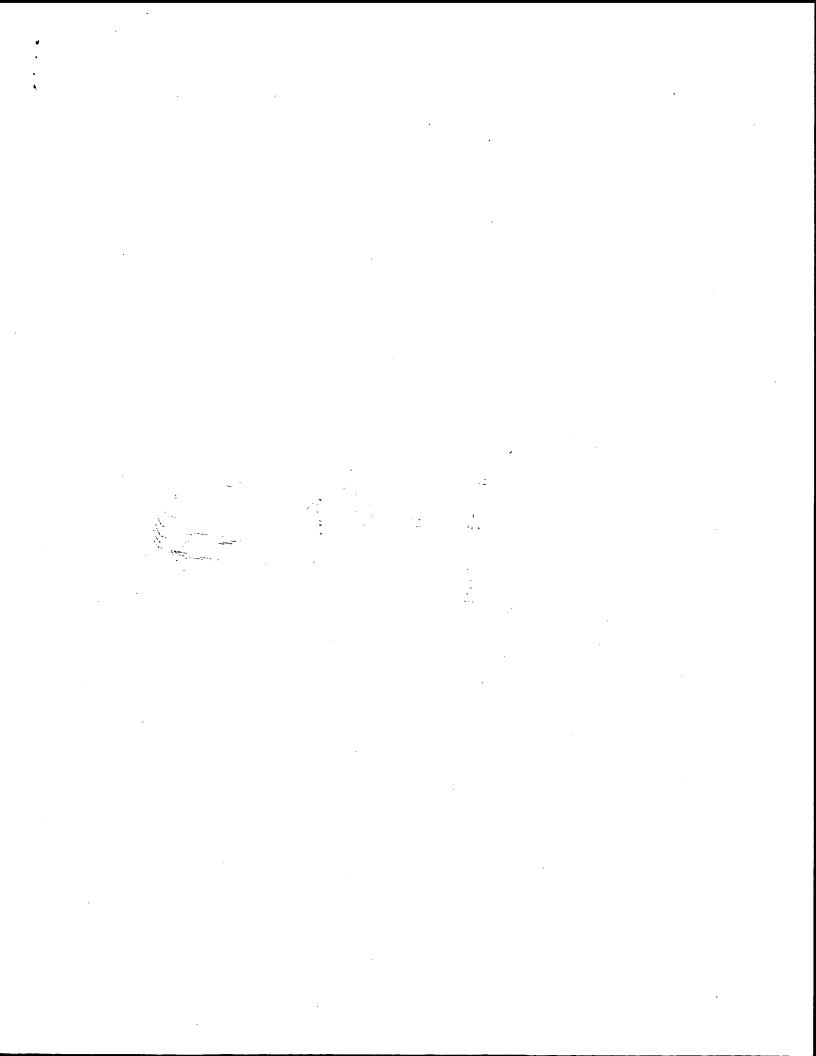
```
밁
                                                                                                                                                                                                                                                                                                                                           ΩV
                                                                                                            Š
                                                                                                                                                     밁
                                                                                                                                                                                       Ş
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                  ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-101-146-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
US-09-101-146-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                   Š
                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 129; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 6, Application US/09101146 Patent No. 6124125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (856) 810-1454 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 32,257
REFERENCE/DOCKET NUMBER: DC
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 8 JAN 1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Medical Research, Kemp et al. TITLE OF INVENTION: No. 6124125el AMP Activated Protein Kinase NUMBER OF SEQUENCES: 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
   241
                                                                          181
                                                                                                                                                     121
                                                                                                                                                                                                                                                                91 PHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSY 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
ZIP: 080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            303 TESEVMNSLYSGDPQDQLAVAYHLIIDNRRIMNQASEFYLASSPPTGSFMDDMAMHIPPG 362
                                     271 EKRLSLEQIQKHPWY 285
                                                                                              211 RADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEP 270
                                                                                                                                                                                       151 SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   363 LKPHPERMP
                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC
OPERATING SYSTEM: WINDOWS 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 66 E. CITY: Marlton
                                                                                                                                                                                                                                                                                                                                             32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Jane Massey Licata REGISTRATION NUMBER: 32,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: WORDPERFECT 6.0 FOR WINDOWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                      1 GHYILGDTLGVGTFGKVKVGKHELTGHKVAVKILNRQKIRSLDVVGKIRREIQNLKLFRH 60
                                                                                                                                                                                                                                                                                                                           GPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKL-SESVLMKVEREIAILKLIEH 90
MKRATIKDIREHEWF
                                                                                                                                                    MVVHRDLKPENVLLDAHMNAKIADFGLSNMMSDGEFLRTSCGSPNYAAPEVISGRLYAGP 180
                                                                                                                                                                                                                             PHIIKLYQVISTPSDIFMVMEYVSGGELFDYICKNGRLDEKESRRLFQQILSGVDYCHRH 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LSRHGKRRP 395
                                                                          EVDIWSSGVILYALLCGTLPFDDDHVPTLFKKICDGIFYTPQYLNPSVISLLKHMLQVDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: Jane Massey Licata, Esq 66 E. Main Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     257
                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dartmouth College, St. Vincents Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (856) 810-1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 JAN 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISKETTE, 3.5 INCH, 1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   October 7, 1998
                                                                                                                                                                                                                                                                                                                                                                                                17.1%; Score 700.5; DB 3; 50.6%; Pred. No. 1.5e-37;
   255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/09/101,146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PN7450
                                                                                                                                                                                                                                                                                                                                                                               52; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DC-0050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STORAGE
                                                                                                                                                                                                                                                                                                                                                                                 73;
                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                  Length 257;
                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

	· ·						71													 			-						
Qy 151 SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210	DVIKSKDEIIMVIEY-AGNELFDYIVQRDKMSEQ	QY 91 PHYLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSY 150	Db 1 GNYQIVKTLGEGSFGKVKLAYHTTTGQKVALKIINKKVLAKSDMQGRIEREISYLRLLRH 60	OY 32 GPYRLEKTIGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLM-KVEREIAILKLIEH 90	Query Match 16.8%; Score 691; DB 2; Length 257; Best Local Similarity 47.5%; Pred. No. 5.9e-37; Matches 121; Conservative 68; Mismatches 64; Indels 2; Gaps 2;	; PAGES: 42-52 ; PAGES: 1988 US-07-857-2248-25		AUTHORS: Hanks, S. K.	; ORGANISM: Saccharomyces cerevisiae ; FEATURE: Protein kinase; Table 8 Column 28 ; PUBLICATION INFORMATION:	365	; TYPE: amino acid ; TOPOLOGY: linear	; INFORMATION FOR SEQ ID NO: 25: ; SEQUENCE CHARACTERISTICS: ; LENGTH: 257	(International) 41 none	MATION:	APPLICATION NUMBER	ord	pple MacIntosh STEM: MacIntosh 7.0	: ch diskette, 1.4 Mb storage	Y: Switze (note: thi		; NUMBER OF SEQUENCES: 114 ; CORRESPONDENCE ADDRESS:	T St	INFORMATION:	US-07-857-2248-25; Sequence 25, Application US/07857224B	RESULT 14	Db 590 KGEKDISEGGRNLT 603	QY 570 KMQVPTAEEMSSLT 583	Db 543 STSTPLKYLKLVASNSQTPPSTENINRPTRYGFFSKLSARFYRRSLH 589	QY 528 PIGTPGTTPPPSPGGGYGGAAWRSRLNSIRNSFLGSPRFHRR 569
					4.7																								

	492 VKTTLLSAQRKLAVNHKLTSASHQIRSPITQSSSQASECTRTPPTHFEMLD 542	말
	474 KTQTLPSRGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRAS 527	οy
	414 PVPTRRALEMAQHSQRSRSYSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTS 473	рь
	SSERETPTAMPGSSRIPVPIAAPNVTISQVTFALDKSTPNRPGATSIRPMA-PRLANALT	Db
	370 PPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGS 413	Qy
	348 HKPRDVXQSL	рь
	ASLGCFRDRERLHRELRSEEENQE-KMIYYLLLD-RKERYP	Qy
		DЬ
	60 SLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSN-G	Qγ
•	200 EVIKGEKYDGRRADMWSGGVILFALLVGALPEDDDNILRQLLEKVKRGVFHMPHFIPPDCQ 259	D
	169 LVSAIEYCHSKSIVHRDLKAENLLLDQQMKLKIADEGFSTTFEPKAPLETFCGSPPYAAP 228	Db
	140 IVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACP 199	VΩ
	109 REVNIMKKLNHPNIVRLLQVIESERTLYLVMEYVSGGELFNYLVKNGRMRERDARVLFRQ 168	ф
	80 REIAILKLIEHPHYLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQ 139	Qy
	49 PKFXSYVNGNGYGVYKIIKTLGKGNFAKVKLAIHLPTGREVAIKLIDKTALNTIARQKLY 108	Db
	25 PQHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVE 79	Qy
20;	Query Match 16.9%; Score 695; DB 4; Length 604; Best Local Similarity 32.2%; Pred. No. 9e-37; Matches 198; Conservative 94; Mismatches 208; Indels 114; Gaps	Be
	NAME/KEY: UNSUTE LOCATION: 52, 291, 354 OTHER INFORMATION: unknown or other 09-523-849-35	US-(
	NAME/KEY: misc_feature NAME/KEY: misc_feature OTHER INFORMATION: GenBank Accession No. 6458561 g2564680	
	ORGANISM: Drosophila melanogaster	
	NGTH:	
	TWARE: PERI	ι.
	: 2000-03-13	
	0009 US	·· ··
	HUMA	٠. ٠.
	Isacchi,	
	Bosotti, R	
	Molteni,	
	LINI	
	Sequence 35, Application US/09523849  Patent No. 6458561	 98
	US-09-523-849-35	OS-(

. .

```
RESULT 15
US-09-930-181-18 -18
Sequence 18, Application US/09930181
Patent No. 6455292
Patent No. 6455292
GENERAL INFORMATION: Full-Length Serine Protein Kinase in Brain and Pancreas TITLE OF INVENTION: Full-Length Serine Protein Kinase in Brain and Pancreas FILE REFERENCE: 16U 101 V1
CURRENT APPLICATION NUMBER: US/09/930,181
CURRENT FILING DATE: 2001-08-16
NUMBER OF SEQ ID NOS: 18
SOFTWARE: PatentIn version 3.0
SEQ ID NO 18
LENGTH: 149
TYPE: PRT
ORGANISM: Homo sapiens
US-09-930-181-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                        망
                                                                                                                                                 Š
                                                                                                                                                                                  В
                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
Search completed: April 16, 2003, 12:33:27 Job time: 24 secs
                                                                                                                                                                                                                                        Query Match 14.1%; Score 579; DB 4; Length 149; Best Local Similarity 80.7%; Pred. No. 4.2e-30; Matches 117; Conservative 13; Mismatches 7; Indels 8; Gaps
                                                          271 EKRLSLEQIQKHPWY 285
|:|: :| : |:
240 LNRISIHEIMQDDWF 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
```



```
OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ritle:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                Result
10
11
11
12
13
14
16
                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
                                                                                                                                4108
3956.5
3758
2490.5
                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                        SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria:
3: sp_fungi:*
4: sp_human:*
5: sp_invertebi:
6: sp_mammal:*
7: sp_mhc:*
8: sp_organel16
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              April 16, 2003, 12:28:03; Search time 98 Seconds (without alignments) 1635.762 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MSSGAKEGGGGSPAYHLPHP....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-003-690-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      671580 seqs, 206047115 residues
                                                                                                                                                                                          Match
                                                                                                                                                                 100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                   Query
 96.3
91.5
60.6
60.6
47.5
44.2
29.9
29.9
20.3
20.3
20.1
20.1
                                                                                                                                                                                                                                                                                                                                                                                                                           sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_archea:*
                                                                                                                                                                                                                                                                                                                                                                                          sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                  sp_mammal:*
                                                                                                                                                                                                                                                                                         sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                  sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                               sp_virus:*
                                                                                                                                                                                                                                                                                                                                                          sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                  sp_plant:*
                                                                                                                                                                                                                                                                                                              sp_rvirus:*
                                                                                                                                                                                                                                                                                                                          sp_unclassified:*
                                                                                                                                                                                         Length
                                                       603
473
851
698
914
701
701
833
1371
                                                                                                                                                                                          DB
                                                                                                             Q8TDC2
Q8TDC3
Q96JL4
Q96JV4
Q96AV4
Q9VUV4
                                                       Q19469
Q95T82
Q8SSX5
Q9Y2K2
                                                                                                                                                                                          IJ
                                    Q96RG0
Q15524
                                                                                                    061298
   096JG7
              дахвед
                        Q96HB3
                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ....PRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                           Q8tdc2 homo sapien
Q8tdc3 homo sapien
                                                                                                                                                                                           Description
                                     Q96rg0
Q15524
                                                                                   Q95t8
                                                                                                                   Q9vuv
                                                                                                                            Q96av4
                                                                       Q8ssx5
                            Q96hb3
       homo
                                                                                 caenorhabdi
drosophila
                                                                                                        drosophila
halocynthia
                                                                                                                             homo
                                                                                                                                        homo
                            homo
                                        homo
                                                 homo
                                                            homo
                                                                        dictyosteli
                                     sapien
sapien
sapien
       sapien
                                                                                                                             sapien
                                                                                                                                                             sapien
                                                                                                                                         sapien
                                                                                                                                                   sapien
                            sapien
```

4.	4 4	<u>4</u>	42	41	40	ω 9	ა 8	37	<u>ა</u>	3 5	34	ω u	32	31	30	2 2	2 0	) t	27	26	25	24	23	22	21	20	19	18	17	
767	767	770.5	772	776	777	780.5	781	783.5	784	786	788	788	788.5	789	/89	1 0	700	700 5	793	795	795.5	796	806.5	809	812.5	814	814	822	823	
18.7	18.7		18.8			19.0		19.1	19.1	19.1	19.2	٠	19.2	•	19.2	٠	10.0	ָ ני	19.3	19.4	19.4	19.4	19.6	19.7	9			20.0		
1398	1398	752	1075	938	505	798	797	514	795	514	793	153	144	920	2 6	1.	744	504	401	729	535	729	795	1096	785	1192	1192	722	752	1
ហ	G	4	υ	տ	10	13	1	10	11	10	1	4	- =		<b>-</b> +	1	4	10	8	4	10	4	. 4	. ౮	L	Ü	· U	<u>-</u>		
Q9W532	077268	Q9UN34	Q95075	848460	QYZRJI	OSIABB	OHIVE	09M726	CCHARO	CZ.HX6Ö	8/9800	COMPO		COHONI	004041	OO TKEA	096RG1	P93113	Q98SC8	060219	QBRWD2	QBTB41	270460	Q1/368	QBQGV3	Q1/340	19T#45	COBO / S	Q96L34	
MARCH OLOSOPHITA				Carosophila	١,	OTVEA		Ogwhfo rattus norv	COMPANY OF THE PROPERTY OF THE			8 ratt	D D D	5 mus	homo	4 mus	homo	u			٠,	J	OR+bA1 homo sapien	OppOlo homo sapien	017368 Caenorhabdi	OBCOV3 Venopus lae		09tw45 caenorhabdi	יים מיים	ossisa homo sapien

## ALIGNMENTS

```
SON DE RAN SON DE DE DE LE RAN SON DE L'ARREST DE LE RAN SON DE L'ARREST DE L'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
                                                                                                                                                                                                                              δδ
                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                             밁
        밁
                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ouery Match 100.0%; Score 4108; DB 4; Length 778; Best Local Similarity 100.0%; Pred. No. 7e-264; Matches 778; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
SER X.Y., YU L., GUO J.H.;
Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases
EMBL; AF479827; AAL87698.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein kinase-like protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID-9606;
                                                                                                                                                    61 AIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFD 120
                                                                                                                                                                                                                                                                                                                                                      61 AIKIVNREKLSESVLMKVEREJAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFD 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 778 AA; 85086 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8D1818D4E54398BB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  778 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

```
RESULT 2
QRTDC3
ID QRTD
AC QRTD
DT 01-J
DT 01-J
DT 01-J
DT 01-J
DT 01-J
C Euka.
OC Euka.
OC Mamm
OC Mamm
OC NCBI,
RN [1]
RP SEQU
RC TISSI
RA She
RA She
EMBL
KW Kina
SQ SEQU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                              128
                                                                                                                                                                                                                                She X.Y., Guo J.H., Yu L.;
submitted (PEB-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AF479826; AAL87597.1;
Kinase; Serine/threonine-protein kinase.
                                                                                                                                                                                                                                                                                                                                                                                QRTDC3;
QRTDC3;
QRTDC3;
QRTEMBLrel. 21, Created)
QRTDUN-2002 (TrEMBLrel. 21, Last sequence update)
QRTDUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                              Putative serine/threonine protein kinase.
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; V
                                                                                                                                                                                                                                                                                                   TISSUE-BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QBTDC3
                                                         68 EKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGR 127
                                                                                                                                                            Local
756;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721 SVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481 RGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSP
                                                                                                                                              œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EKLSESVLMKVERBIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGR
                                                                                                  GGGGE-----EEEAEERGRHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNR 83
                                                                                                                   GGGGSPAYHLPHPHPHPPOHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNR 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQP 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQP 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFI 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFI 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSP 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEMAQHSQRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPS 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YPSCEDODLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YPSCEDQDLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GRRVAMRSLPSNGELDPDVLESNASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRRVAMRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKER 360
                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                            794 AA;
                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                            86753 MW;
                                                                                                                                                                                96.3%;
98.1%;
                                                                                                                                                            Score 3956.5; DB 4; Length 794; Pred. No. 7.8e-254; 1; Mismatches 9; Indels 5;
                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                   5DD395B0E61AEF77 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  794 AA
                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                          1;
```

밁 δÃ 밁 δÃ

```
RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
Pfam; PF00069; pkinase; 1.
ProDom; PD000001; Euk_pkinase; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; UNKNOWN_1.
                                                                                                                                MEDLINE-21245130; PubMed-11347906;
Nagase T., Nakayama M., Nakajima D., Kikuno R., Ohara O.;
"Prediction of the coding sequences of unidentified human genes.
The complete sequences of 100 new cDNA clones from brain which co
for large Proteins in vitro.";
                                                           EMBL; AB058714; BAB47440.1; -
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkinase.
InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                      01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                    TISSUE=BRAIN;
                                                                                                                                                                                                                                                                                                                        KIAA181
                                                                                                                                                                                                                                                                                                                           KIAA1811 protein (Fragment).
                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                             Q96JL4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         744 EKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKKLLATNGTPLP 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             728 EKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    324 SLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             264 FHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              144 LTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLL 203
                                                                                                                               Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SSSEGPEPSPREDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALAD 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPPSPGGGVGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPPSPGGGVGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ORSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQ 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLROLLEKVKRGV 247
                                                                                                                            8:85-95(2001)
                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                     715 AA.
                                                                                                                                                which code
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               323
```

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                           밁
OCC BERRY NA STANSON
                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                           RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124 KKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVG 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       184 DSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304 VAMRSLPSNGELDPDVLESMASIGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPS 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                              01-AUG-1998 (TrEMBLrel. 07, Created)
01-AUG-1998 (TrEMBLrel. 07, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
                                                                                                                                                                     060843;
                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                 Putative serine/threonine protein kinase (Fragment).
                                                                                                                                                                                    060843
                                                                                                                                                                                                                                                                                                                                                                                   604
                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                541
 TISSUE=BRAIN;
MEDLINE=21064499; PubMed=11124703;
Stanchi F., Bertocco E., Toppo S.,
                                                                                                       Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                664
                                       SEQUENCE FROM N.A.
                                                               NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKV 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CEDQDLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEM 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CEDQDLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEM 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VAMRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KRGVEHMPHEIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRR 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPPSPGG 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               715;
                                                                                                                                                                                                                                                                                                                               QVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQ 723
                                                                                                                                                                                                                                                                                                                                                                                 KEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRF
                                                                                                                                                                                                                                                                                                                                                                                                           VGGAAWRSRLNSIRNSELGSPREHRRKMQVPTAEEMSSLTPESSPELAKRSWEGNEISLD
                                                                                                                                                                                                                                                                                                                                                                                                                         VGGAAWRSRLNSTRNSELGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFISLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AQHSQRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGP 483
                                                                                                                                                                                                                                                                                                                                                          RGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGG 480
                                                                                                                                                                                                                                                                                                      QVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      715 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78499 MW; B90F6EE115C418A5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91.5%;

 Mismatches

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 3758;
; Pred. No. 9
     Toppo S., Dioguardi R.,
                                                                                                                                                                                          PRT;
                                                                                                                                                                                          603 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.6e-241;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 715;
         Simionati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                603
                                                                                                                                                                                                                                                                                                                  660
```

```
ν
γΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                            멁
                                                                                                                                                                                                                   Б
                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                  200
                                                                                                                                                                밁
                                                                              Š
                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 LIEHPHYLKLHDYYENKKYLYLVLEHYSGGELFDYLVKKGRLTPKEARKFFRQIISALDF 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkin
InterPro; IPR001245; Tyr_pkinase.
Pfam; PF00069; pkinase; 1.
PRINTS; PR00109; TYRKINASE.
PRINTS; PR00109; TYRKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cannata N., Zimbello R., Lanfranchi G., Valle G.; "Characterization of 16 novel human genes showing high similarity to "Characterization" of 16 novel human genes showing high similarity to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -!- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES EMBL; AJ006701; CAA07196.1; -. HSSP, Q63450; 1A06. - . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              yeast 18:69-80(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProDom; PD000001; Euk_pkinase; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kinase; Serine/threonine-protein kinase. NON_TER 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87 LIEHPHYLKLHDVYENKKYLYLVLEHYSGGELFDYLVKKGRLTPKEARKFFRQIVSALDF 146
                                                                                                                                                                                                                                                                                                    447
                                                                                                                                                                                                                                                                                                                                                                                                                 327
                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             207
                                                                                                                                                                                                                                                                                                                                                                                       239
                                                                                                                                                                                                                                                                                                                                  299
                                                                                                                                                                                                                                                                                                                                                            387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 CHSHSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIRGEK
                                                                                                                                                                                                                     375 G-----TPVHTPKESPAGTPNPTPPSSP--SVGGVPWRARLNSIKNSFLGSPRF
                                                                                                                                                                                          567 HRRKMQVPTAEEMSSLTPESSPELAKRSWEGNFISLDKEEQIFLVLKDKPLSSIKADIVH 626
                                                   536 IYSVTFTLLSGPSRRFKRVVETIQAQLLSTHDPPAAQHLS-----
                                                                                                            482
  578
                           747 PPGRPDPELS 756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEK 206
                                                                                                                                                                                                                                                                                                                                                           LSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSPLS
                                                                                                                                                                                                                                                                                                                                                                                       EVEPEKRISLEGIOKHPWYLGGKHEPDPCLEPAPGRRVAMRSIPSNGELDPDVLESMASI 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMI 266
                                                                                                                                                                                                                                                                                                                                                                                                              GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPM 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 488;
                                                                                                                                                                                                                                                                                                      SPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPSARSTPLPGPP
                                                                                                                                                                                                                                               GSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVGGAAWRSRLNSIRNSFLGSPRF 566
                                                                                                                                                                                                                                                                                                                                  AFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGG 686
                                                                                                                                                                 SPR---
                                                                              TYSVTETLISGPSRREKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQP 746
    PP--PAPGLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      603 AA; 67401 MW; B02C5D678F8ECE96 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                 -----VTPHPSPRGSPLPTPK
     585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60.6%; score 2490.5; DB 4; Length 603; 72.8%; Pred. No. 7.1e-157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85;
                                                                                                                                                                                                                                                                                                                   506
                                                                                                                                                                                                                                                                                                                                                                          446
                                                                                                                                                                                                                                                                                                                                                                                                    298
                                                                                                                                                                                                                                                                                                                                                 355
                                                                                                                                                                                                                                    421
                                                                     577
```

9

```
Ω
                                                                                                                                                                                                                                                                                                                                                                    RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O96AV4

ID Q2

AC Q2

AC Q2

D7 Q1

D7 Q1

D7 Q1

D7 Q1

D7 Q1

D8 Hy

CO E Hy

CO ME

CO T1

RA ST TE

RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 472;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Ephydroidea; Dro
NCBI_TaxID=7227;
                                Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
                                                                                              Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                  Q9VUV4;
                                                                                                                                                            CG6114 protein.
                                                                                                                                                                                 01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last seq
01-MAR-2002 (TrEMBLrel. 20, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                    726 ADEKNGAQTRPAGAPPRSLQPPPGRPDDELSSSPRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        666 DISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQAL 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 GAAWRSRLNSIRNSFLGSPREHRRKNOVPTAEEMSSLTPESSPELAKRSWEGNEISLDKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      546 GAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFISLDKE 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 GGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          426 HSORSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRG 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306 MRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCE 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; BC016681; AAH16681.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-DEC-2001 (TYEMBLrel. 19, Last sequence update)
01-JUN-2002 (TYEMBLrel. 21, Last annotation update)
Hyporthetical 50,8 kDa protein.
Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-LYMPH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q96AV4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q96AV4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                       ADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRAPPKDKKLLATNGTPLP 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISSSEGPEPSPREDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EQIFLVLKDKFLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGFSVFQKFVRFQV 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVG 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSQRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DQDLPPRNDVDPPRKRYDSPMLSRHGKRRPERKSMEVLSITDAGGGGSSPVPTRRALEMAQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DQDLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQ 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCE 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                 Drosophilidae; Drosophila
                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (OCT-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      473 AA; 50750 MW; D27DAD437DA98AA9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel. 19, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60.0%;
                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 2466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                           851 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  473 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.2e-155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 4; Length 473;
                                Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

0

```
밁
                                                                                                                                                      Дb
                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                    γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RA DUTBIN K.J. EVANGEISTA, JUGAIN FORDA S., DUNKOV B.C., DUNN P. RA FOSIER C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.A. RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M., Glasser K., RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J., RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C., RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., Mattel B., McIntosh T.C., McLoedd M.P., McShrefi A., RA Lux, Mattel B., McIntosh T.C., McLoedd M.P., McShrefi A., RA Mount S.M., Woly M., Murphy B., Murphy L., Muzny D.M., Nelson D.L., RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M., RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Purl V., Reese M.G., Shee B.C., Siden-Kiamos I., Simpson M., Skongeler F., Shen H., RA Spier E., Spradling A.C., Stapleton M., Stong R. M., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Walliams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A., RA Weinston S.M., Weinstock G.M., Weissenbach J., RA Zheng X.H., Zhong F.N., Zhong W., Zhon X., Zhu X., Zhu X., Zhu S., The genome sequence of Drosophila melanogaster.", Embl., AEO03529, AAF49569.1, --

EMBL; AEO03529; AAF49569.1, --

DR EMBL; AEO03529; 1A066.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 421;
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RA Adams M.D., Ceiniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Burandon R.C., Rogers Y.-H.C., Blazej R.G., Nelson C.R., Miklos G.L.G.,
RA Harley R.M., Bayayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktargglu L., Beasley E.M.,
Besson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottler P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottler P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dourbin K.J., Evangelista C.C., Ferriaz C., Ferriera S., Fleischmann W.,
Rosler G., Erstelbang C.C., Ferriaz C., Ferriera S., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriera S., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriera S., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriera S., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriaz C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriac C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriaz C., Ferriac C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriac C., Ferriac C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriac C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriac C., Ferriac R., Fleischmann W.,
Ra Fosler G., Ferriac C., F
                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00069; pK11nasE.

Pfam; PF000109; TYRKINASE.

PRINTS; PR001001; Euk_pkinase; 1.

PRODOM; P0000001; Euk_pkinase; 1.

SMART; SM00220; S_TKC; 1.

PROSITE; PS00107; PROTEIN_KINASE_DOM; 1.

PROSITE; PS00108; PROTEIN_KINASE_ST; 1.

PROSITE; PS00108; PROTEIN_KINASE_ST; 1.

ATP-binding; Serine/threonine-protein kinase; Transferase.

ATP-binding; Serine/threonine-protein kinase; Transferase.

44152 MW; 9E5456E8E5D47EF0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HSSP: 063450; 1A06.
FlyBase: FBgn0036544; CG6114.
InterPro; IPR000719; Fuk pkinase.
InterPro; IPR002290; Ser_thr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
Pfam; PP00069; pkinase; 1
130 FCHSHSICHRDLKPENLLLDEKNNIKIADFGMASLQPAGSMLETSCGSPHYACPEVIRGE 189
                                   146 FCHSYSICHROLKPENLLLDEKNNIRIADFGMASLOVGDSLLETSCGSPHYACPEVIKGE 205
                                                                                                                                                      86 KLIEHPHYLKLHDYYENKKYLYLVLEHVSGGELFDYLYKKGRLTPKEARKFFRQIVSALD
                                                                                                                                                                                                                                                                       26 QHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAIL 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=20196006; PubMed=10731132;
                                                                                                                   KLIDHPHVLGLSDVYENKKYLYLILEHVSGGELFDYLVKKGRLTPKEARKFFRQIISALD 129
                                                                                                                                                                                                                                          ENCQFVGPYRLEKTLGKGQTGLVKLGVHCVIGKKVAIKIINREKLSESVLMKVEREIAIM
                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                    47.5%; Score 1952; DB 5; 54.9%; Pred. No. 5.2e-121;
                                                                                                                                                                                                                                                                                                                                                                          96; Mismatches 138;
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 851;
                                                                                                                                                                                                                                                                                                                                                                    Indels 112;
                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                             24;
```

밁 S

Š 밁 Q 밁

δÃ 밁

밁

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  322 SMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQD----LPPRND---V 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           250 IEVNPDRRLTLAEINRHPWYTAGGKGELELELPMMEV-----VQTHVIPTATAVDPDVLN 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365 DPPRKRLDTCRI--NGTNAPSYGQI-----SEGSPLTPRRQAFNFRSYSSTRNHQR 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      376 DPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSDV-PTRRALEMAQHS----QRS 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     471 PTSKTQTLPS----------RGPRGGGAGEQPPPPPSARSTPLPG-PPG 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   414 RSPTTYTSSYRSSSYHSPTRCNSPMSSAQQQANAISRPSSPAAGTRHSTYGDRDRSGHHS 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           474 SVSRTPSHSSQKSIEGDVVVVVREPRIERRDSLKQERGGG-----SPRDRGDCGIPPG 525
                                                                                                                                                                                                                                                         Halocynthia roretzi (Sea squirt).
Eukaryota; Metazoa; Chordata; Urochorda
Stolidobranchia; Pyuridae; Halocynthia.
NCBI_TaxID=7729;
                                                                                                                                                                                                                                                                                                                                               01-AUG-1998 (TrEMBLrel. 07, Created)
01-AUG-1998 (TrEMBLrel. 07, Last seq
01-MAR-2002 (TrEMBLrel. 20, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               610 LYLKDKPLSSIKADIYHAFLSIPSLSHSYLSQTSFRABYKASG-GPSYFQKPYRFQYDIS 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            584 KTRLTNIKNSFLGSPRFHRRKMQV-SADEV-HLTPESSPELTKRSWFGNLITTEKDETFT 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      550 RSRLNSIRNSFLGSSDREHRRKMOVPTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQIF 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   526 SPGGNSSGSTSASPSVHHRANSGPTIAIIVNPNGSPMMNNSSPGM--PGSPCNTPGGQLW 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               061298
                                                                                                                                                                                                                                                                                                                                   HrPOPK-1 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            702 AI-----CKQGDIADMLFALTFTLLSGNIRRFRRICEHIQSQVCS 741
                                                                                                                                         Sasakura Y., Ogasawara M., Makabe K.W.;
"Maternally localized RNA encoding a serine/threonine protein kinase
in the ascidian, Halocynthia roretzi.";
Mech. Dev. 76:161-163(1998).
                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
pfam; pF00069; pkinase; 1.
probom; pb000001; Euk pkinase; 1.
smart; sm00220; STKC; 1.
prostre; ps00107; profein_Kinase_are; unknown_1.
prostre; ps50011; profein_Kinase_Dom; 1.
                                                                     InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkinase
                                                                                                    HSSP; Q63450; IAU6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IEVEPEKRLSLEQIQKHPWY-LGGKHEPD---PCLEPAPGRRVAMRSLPSNGELDPDVLE 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RSVSGASTGLSSSPLSSP---RSPVFS-----FSPEPGA-----GDEARGG-GS 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ILVKGKPIATVKAHLIHAFLSMAELSHSVVSPTSFRVEYKRNGNGFVMFQRHVKFQVDIS 701
                                                                                                               SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES L; AB014885; BAA28663.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLS 715
                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                 Urochordata; Ascidiacea;
                                                                                                                                                                                                                                                                                                                                                                                                                        698 AA
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멅
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                      ğ
                                                                                                                                                                                                                                                                                                                                                                         멇
 OC OS GET DI DI AC DI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
ATP-binding; Serine/threonine-protein kinase; Transferase.
SEQUENCE 698 AA; 78607 MW; B29B1751E83200BF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125 DYCHNHNVCHRDLKPENLLLDEKNNIKVADFGMASLOPEGFLLETSCGSPHYACPEVIRG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145 DECHSYSICHRDLKPENLLLDEKNNIRIADEGMASLQVGDSLLETSCGSPHYACPEVIKG 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25 PQHAQYYGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAI 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             315 LDPDVLESMASIGGFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSGEDQ-DLPPRN 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                245 MIDVRPDKRLSLOQVLQHPWMRPGSNSVEGVLVTPDPVVPVIDCVP-----LPEEES 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               265 MIEVEPEKRLSLEQIQKHPWYLGGKHE-----PD---PCLEPAPGRRVAMRSLPSNGE 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65 MKLIEHPHILGLHDVYENKKYLYLILELVSGGELFDYLVQKGRLIPREARREFRQIISAV 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85 LKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSAL 144
;|||||||:| ||:|||:||:||:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            357 HPDAPRKRVDSTSSLSSSNGDDWCVNPIPORKMSAESLCLTDS---SSPLLSRK--KSTE 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             374 DVDPPRKRVD--SPMLSRHG-----KRRPERK-SMEVLSITDAGGGGSPVPTRRALEMAQ 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              297 VDPDVLASMTSLGCFCNKEKLLKNLITEEQNTEKVVYTMLLRRKKRYPSFDDDADSLPCK 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 POPGQYVGPYKLEKTLGKGQTGLVKLGVHCMTGKKVAVKIVNREKLSESVINKVEREIAI 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412 THORSOSL----TGESNSRL-----VCNISDQTKAESKSRINGTPVRRGTTCSS----- 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             426 HSORSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRG 485
                                                                                                                                                                                                                                                                                                                                                                                                                                         486 GGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVG 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          457 ----NQPVP------PNP----- 471
                                                                                  Q19469 PRELIMINARY;
Q19469; Q9BMN6;
Q19469; Q9BMN6;
Q1-NOV-1996 (TERMBLrel. 01, Created)
Q1-CT-2001 (TrEMBLrel. 18, Last sequence update)
Q1-MAR-2002 (TERMBLrel. 20, Last annotation update)
Q1-MAR-2002 (TERMBLEL. 20, Last annotation speak)
                                                                                                                                                                                                                                                                                                                                                                                                      604 ----KEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASG--GPSV 656
                                                     T15A2.6 protein (Serine/threonine kinase SAD-1).
                                                                                                                                                                                                                                                                                                                                                                         528
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                      657 F-QKPVRFQVDI-----SSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVET 708
                                                                                                                                                                                                                                                                    709 IQAQL 713
                                                                                                                                                                                                                                                                                                     588 FHORSIKFOVDIIOHSSLDROENGKKPSSOTVGS----FTIAFSLISGPIKRYKRVLEL 642
                                                                                                                                                                                                                                     643 LOMOM 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EKYDGRRADMWSCGVILFALLVGALÞEDDDNLRQLLEKVKRGVFHMÐHFIÞÞDCQSLLRG. 264
                                                                                                                                                                                                                                                                                                                                                                         TEHCDELPYAIAYKNRTLNSVKSELVHAFLSIPNLTHSMVSPTRFRCDYRSSGTSTTSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative 109; Mismatches 115; Indels 118;
                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44.2%; Score 1814; DB 5; Length 698; 52.8%; Pred. No. 5.6e-112;
                                                                                                                                                                 PRT;
                                                                                                                                                                   914 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21;
```

```
밁
                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
438 ---SPTESPRSSTRDLFGSSSSGSYSARAGEDRDRGRSASRSTNSYHYYTQPVDPQTLAE 494
                            396 KRTDSSRTSRY-----PMGSIAD----GSPINPRKTYGRNQKSGRHSSLGG---- 437
                                                                                      380 KRVDSPMLSRHGKRRÞERKSMEVLSITDAGGGGSÞVÞTRRALEMAQHSQRSRSVSGASTG 439
                                                                                                                336 NCLGCFKDKQKLINELLSPKHNTEKMVYFLLLDRKRRPAQEDDTEIVLRGAAQNNDPPK 395
                                                                                                                                             324 ASLGCFRDRERLHRELRSBEENOEKMIYYLLLDRKERYPSCEDQ-DLPPR---NDVDPPR 379
                                                                                                                                                                           277 AMIEVDPGKRYSLADVFKHPW-VSGTTKADPELELPMSQVVQTHVIPGEDSIDPDVLRHM
                                                                                                                                                                                                     264 GMIEVEDEKRLSLEQIOKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESM 323
                                                                                                                                                                                                                                                   204 GEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLR 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00220; S_TKC; 1.
SMART; SM00220; S_TKC; 1.
SMART; SM00220; TyrKC; 1.
PROSITE; PS00101; PROTEIN_KINASE_ATP; UNKNOWN_1.
PROSITE; PS00108; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
ATP-binding; Kinase; Serine/threonine-protein kinase; Transferase.
SEQUENCE 914 AA; 100840 MW; FDE311D31B249D3E CRC64;
                                                                                                                                                                                                                                                                                        157 LDFCHAHNICHRDLKPENLLLDERNNIKVADFGMASLQVEGSMLETSCGSPHYACPEVIR 216
                                                                                                                                                                                                                                                                                                                     144 LDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQYGDSLLETSCGSPHYACPEVIK 203
                                                                                                                                                                                                                                                                                                                                                                 84 ILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSA 143
                                                                                                                                                                                                                                                                                                                                                                                                                         24 PPQHAQYVGFYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIA 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PR00109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Crump J.G., Zhen M., Jin Y., Bargmann C.;
"The SAD-1 kinase regulates presynaptic vesicle clustering.";
Submitted (OCT-2000) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                                                                                                                                                                                                                                                                                                                        37 PVAQAQYCGPYKLEKTLGKGQTGLVKTGTHCITGRKVAIKIVNKEKLSESVLQKVEREIA 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; Q63450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nterPro; iPR000719; Euk_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          investigating biology.";
Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (MAR-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome sequence of the nematode C elegans: A platform for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=6239;
                                                                                                                                                                                                                                   GEKYDGRKADVWSCGVILYALLVGALPFDDDNLRNLLEKVKRGVFHIPHFVPADVQSLLR 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            òca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                 IMKLIEHPHVLHLYDVYENKKYLYLLLEHVSGGELFDYLVRKGRLMSKEARKFFRQIISA 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF316542; AAG50270.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR001245; Tyr_pkinase.
IPR000130; Zn_MTpeptdse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR002290; Ser_thr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYRKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42.5%; Score 1744; DB 5; 50.6%; Pred. No. 3.4e-107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches 198; Indels 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 914;
```

Б Š В Ş

```
Db
                                                                                                                                                                     V<sub>Q</sub>
                          Вþ
                                                     QΥ
                                                                                     В
                                                                                                             Qy
                                                                                                                                                                                                  В
                                                                                                                                                                                                                             γQ
                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
176 LLLERKRRPALEDDDETAQKSRSELDAVDPPRKRLDTCRI---NGTNAPSYGQI-----
                          353 LLLDRKERYPSCEDQD----LPPRND----VDPPRKRVDSPMLSRHGKRRPERKSMEYLSIT 406
                                                                                                                                                                                                                                                                                                                                                          Stapleton M., Brokstein P., Hong L., Agbayani A., Carlson J., Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R., Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C.J., Yu C., Lewis S.E., Rubin G.M., Celniker S., Shouanenavong S., Wan K., Submitted (OCT-2001) to the EMBL/AGENBANK/DDBJ databases.

EMBL: AV060288; AAL25327.1; -
FlyBase; FBgn003544; CG6114.
InterPro; IPR000719; Euk_Pkinase.
                                                         121 LPMMEV-----VQTHVIPTATAVDPDVLNAICSLGGFKEKEKLIQELLSSSHNTEKVIYF
                                                                                    294 -PCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYY 352
                                                                                                                               237 RQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWY-LGGKHEPD-- 293
                                                                                                                                                                      ProDom; PD000001; Euk_pkinase; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
ATP-binding; Transferase.
SEQUENCE 701 AA; 76973 MW; 87B308798
                                                                                                                                                                                                                                      Local 281;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q95T82;
Q95T82;
Q1-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GH13047p.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster (Fruit fl_{y}).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-DEC-2001 (TrEMBLrel. 19, 01-MAR-2002 (TrEMBLrel. 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       685 GGIYSVTFTLISGPSRREKRVVFTIQAQLLSTHDQPSVQALADEKNGA--QTRP 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   727 TPTYVVQEVILAGPVRREKRLVEHLSAIL----QNSTQQRADRQQQAALMVRP 775
                                                                                                                ROLLEKVKRGVFHIPHFVPPDCOSLLRGMIEVNPDRRLTLABINRHPWVTAGGKGELELE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        673 FLQIHELSHSVVGQNCFRVEYKRGPTVGGSVFSRGIKMNVDII------PSPQQVVIAGE 726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  628 FLSIPSLSHSVLSQTSFRAEYK--ASGGPSVFQKPVRFQVDISSSEGPEPSPRRDG-SGG 684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                613 SNGTAESDSEDSOMIDTTDLVKKSWFGSLASSMSVERDDTHCVPVQGKTLNSIKAELIRA 672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           572 QVPTAEEMSSLTPE-SSPELAKRSWEGNF---ISLDKEEQIFLVLKDKPLSSIKADIVHA 627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        555 ESVVVSSSTMNSTNSSTNSLIAGNSQTSIGSTSG--PWRSKLNNIKNSFLGTPRFHRRKM 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   512 SGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVGGAAWRSRLNSIRNSELGSPRPHRRKM 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               495 AARHVRDAQERRESRDSGRGSSRKESKDRSDKSASSSSCKNDASSTSSVPHKYSPPSVMS 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                           76973 MW; 87B30879883B2425 CRC64;
                                                                                                                                                                                                                                                      29.9%; Score 1228; DB 5; 45.2%; Pred. No. 3.7e-73;
                                                                                                                                                                                                                                  86; Mismatches 142; Indels 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update;
Last annotation update;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      701 AA.
                                                                                                                                                                                                                                                               Length 701;
                                                                                                                                                                                                                                22;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                몽
                                                                                                                                                                                         믕
                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                 Ş
Š
                                         밁
                                                                         Š
                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                        Matches 168; Conservative
                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q8SSX5;
Q1-JUN-2002 (TrEMBLrel. 21, Created)
Q1-JUN-2002 (TrEMBLrel. 21, Last sequence update)
Putative serine/threonine protein kinase.
Dictyostelium discoideum (Slime mold).
Eukaryota: Mycetozoa; Dictyosteliida; Dictyostelium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gloeckner G., Eichinger L., Szafranski K., Pachebat J., Dear P., Lehmann R., Baumgart C., Parra G., April J.F., Guigo R., Kumpf K., Tunggal B., Cox E., Quail M.A., Platzer M., Rosenthal A., Noegel A.A.; "Sequence and Analysis of Chromosome 2 of Dictyostelium."; Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q8SSX5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           228 ---SEGSPLTPRRQAFNFRSYSSTRNHQRRSPTTVTSSVRSSSYHSPTRCNSPMSSAQQQ 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          345 LRQERGGGSPRDRGDCGIPPGSPGGNSSGSTSASPSVHHRANSGP----TIAISMFHDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              464 --EARGGGSPTSKTQT-LPSRGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSP 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     285
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID-44689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             695 ISGPSRRFKRVVETIQAQLLS 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    521 LHTPRASPTGTP---GTTP--PPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPT
                                                                                                                                                       149
269 EPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGC 328
                                     31 VGPYRLEKTIGKGQTGLVKLGVHCITGQKVAIKIVNREKL--SESVLMKVEREIAILKLI 88
                                                                                                                                                                                         66
                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANAISRPSSPAAGTRHSTYGDRDRSGHHSSVSRTPSHSSQKSIEGDVVVVREPRIERRDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DAGGGGSPV-PTRRALEM-----AQHSQRS-----RSVSGASTGLSSSPLSS---- 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LSGNIRRFRRICEHIQSQVCS 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSVVSPTSFRVEYKRNGNGPVMFQRHVKFQVDISAI-----CKQGDIADMLFALTFTL 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADEV-HLTPESSPELTKRSWFGNLITTEKDETFTILVKGKPIATVKAHLIHAFLSMAELS 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AEEMSSLTPESSPELAKRSWFGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLS 635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DSNSVVNPNGSPMMNNSSPGMPGSPCNTPGGQLWKTRLTNIKNSFLGSPRFHRRKMQV-S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----PRSPV------FSFSPEPG-----AGD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSVLSQTSFRAEYKASG-GPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTL
                                                           GRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEV 268
                                                                                                               SRNICHRDLKPENLLLSGDKRIKIADFGMGSIVRKDMLLHTSCGSPHYASPEVVSGIDYD 185
                                                                                                                                                 SYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYD 208
                                                                                                                                                                                       DHPNAMKMYEVYETSKYLFLILEYVEGGELFDYLVEKGGLESGEALFFFQQIIIGLEYCH 125
                                                                                                                                                                                                             EHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCH 148
                                                                                                                                                                                                                                                                 VGPFIIGKTLGQGTTGKVKLGFHKDTGFKVGIKIINKELLINKPSMRRKIEREIVLMKLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                833 AA; 93467 MW; 51E64036C90C0F94 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                          21.3%; Score 874; DB 5; Length 833; 50.1%; Pred. No. 1.3e-49;
                                                                                                                                                                                                                                                                                                                                              67; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     833
                                                                                                                                                                                                                                                                                                                                                  93; Indels
                                                                                                                                                                                                                                                                                                                                                    7;
                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               344
                                                                                                                                                                                                                                                                                                                                                      4
```

```
YO !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
Q9Y2K2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCOCKER POR REPORTED TO THE REPORT OF THE R
                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                 밁
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1999 (TrEMBLrel. 12, Created)
01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9Y2K2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-99246063; PubMed=10231032;
Nagase T., Ishikawa K., Suyama M., Kikuno R., Hirosawa M.,
Miyajima N., Tanaka A., Kotani H., Nomura N., Ohara O.;
"Prediction of the coding sequences of unidentified human genes. XIII.
The complete sequences of 100 new cDNA clones from brain which code
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KIAA0999 protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001249; UBA_domain.
Pfam; PF00069; pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KIAA0999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      302 VGTIDEVKQQLVSNQKS-ATLIYYRLLEERKKFDS 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329 FRDRERLHRELRSEEENQEKMIYYLLLDRKERYPS 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for large proteins in vitro.";
DNA Res. 6:63-70(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART; SM00220; S_TKC; SMART; SM00219; TYTKC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00109; TYRKINASE.
ProDom; PD000001; Euk_pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP; Q63450; 1A06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE 1371 AA; 149525 MW; F0FBA385B8226158 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00107; PROTEIN_KINASE_ATP; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Serine/threonine-protein kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS50011; PROTEIN_KINASE_DOM; 1
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
                                                                                                                                                                                                                                                                                                                                                                                            122 IGKGNFAVVKRATHLVTKAKVAIKIIDKTQLDEENLKKIFREVQIMKMLCHPHIIRLYQV 181
302 VLYVLVCGALPFDGSTLQNLRARVLSGKFRIPFFMSTECEHLIRHMLVLDPNKRLSMEQI 361
                                                                                                                                                                                            160 ENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGV 219
                                                                                                                                                                                                                                                           100 YENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKP 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                        40 LGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDV 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 AAGAGTGGAGPAGRLLPPPAPGSPAAPAAVSPAAGQPRPPAPASRGPMPARIGYYEIDRT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQI 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AB023216; BAA76843.2;
                                                                                                                             ENLLLDANLNIKIADFGFSNLFTPGQLLKTWCGSPPYAAPELFEGKEYDGPKVDIWSLGV 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative 115; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20.3%; Score 832; DB 4; 28.6%; Pred. No. 1.5e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 1371 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4; Length 1371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             280; Indels 220;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

. \_

```
ACCOMENS TO THE PROPERTY OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 12
Q96RG0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
٠<u>.</u>
                                      Pfam; PF02119; KAL; 1.

Pfam; PF00069; pkinase; 1.

Pfam; PF00627; UBA; 1.

ProDom; PD0000001; Euk_pkinase; 1.

PROSITE; PS00107; PROTEIN_KINASE_ATP; UNKNOWN_1.

PROSITE; PS00110; PROTEIN_KINASE_ST; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                       Wht signaling.";
nat. Cell Biol. 3:0-0(2001).
EMBL; AF387638; AAK82368.1;
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR001772; Kinase_Cterm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Ser/Thr protein kinase PAR-1Balpha.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sun T.Q., Lu B., Feng J.J., Reinhard C., Jan Y.N., Fantl W.J., Williams L.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "PAR-1 is a Dishevelled-associated kinase and a positive regulator of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                         nterPro; IPR002290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q96RG0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q96RG0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780 SSPPPNHPNNHLFROPSNSPP 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    746 -- PPPGRPDPELSSSPRRGPP 764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720 TLEKTQQQHMLYQQEQHHQILQQQIQDSICPPQPSPPLQAACENQPALLTHQLQRLRIQP 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            705 VVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPP------RSLQ----- 745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                657 KDSNTLHLPTER---------FSPVRRFSDGAASIQAFKAHLEKMGNN 695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            535 TPPPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRS 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             487 GAGEQP-----PPPSARSTPLPGPPGSPRSSGGT--PLHSP--LHTPRA-SP--TGTPGT 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            524 DPRTEVMEDLQKLLPGFPGVNPQAPFLQVAP-------NVNFMHNLLDMQNLQPT 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             474 SVPQVQLIN------PENQIVEPDGTLNLDSDEGEEPSPEALVRYLSMRRHTVGVA 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376 DPPRKRVDSPMLSRHGKRRPERKSME---VLSI-TDAGGGGSPVPTRRALEMAQHS---- 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       414 LQSLRSDAYDHYSAIYSLLCDRHKRHKTLRLGALPSMPRALAFQAPVNIQABQAGTAMNI 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      336 HRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLP--PR------NDV 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      280 QKHPWYLGGKHEPDPCLEPAPGRRVA-MRSLPSNGELDP---DVLESMASLGCFRDRERL 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSIKQLQQECEQLQKMYGGQID-----ER 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S-----VF0KPVRF0VDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKR 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WFGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGP 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------PAVTPVDEESSDGEPDQEAVQSSTY 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GQLEYKEQSILQPPTLQLLNGMGPLGRRASDGGANIQLHAQQLLKRPRGPSPLVTMTPAV 631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -QRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGG 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CKHKWMKLG--DADPNFD----RLIAECQQLKEERQVDPLNEDVLLAMEDMGL--DKEQT 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                  Ser_thr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 691 AA
```

```
RESULT 13
Q15524
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ō.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         νg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                     Q15524 PRELIMINARY; PRT; 745 AA. Q15524; O1-NOV-1996 (TrEMBLrel. 01, Created) O1-FEB-1997 (TrEMBLrel. 02, Last sequence update) O1-JUN-2002 (TrEMBLrel. 21, Last annotation update)
           Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                   Serine/threonine protein kinase.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                  666 -----VRFKRISGTSMAFKNIASKIANEL 689
                                                                                                                                                                                                                                                                                                     684 GGGIYSVTFTLISGPSRRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                                                                                                       624 IVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSG 683
                                                                                                                                                                                                                                                                                                                                              630 LHEKYMLL--CMHGTPGHEDF----
                                                                                                                                                                                                                                                                                                                                                                                                            570 TLRPHVVGSGGNDKEKEEFREAKPRSLRFTWSMKTTSSMEDNEMMREIRKVLDANSCQSE 629
                                                                                                                                                                                                                                                                                                                                                                                                                                             581 SLTP------ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  514 LRQVRDQQNLPYGVTPASPSGHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        454 LLERASLGQASIQNGKDSTAPQRVPVASPSAHNISSSGGAPDRTNFPRGVSSRSTFHAGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             502 L--PGPPGSPRSSGGTPLHSPLHTPRASPT------GTPGTT-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 442 SSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPSARSTP 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATP-binding; Kinase; Transferase.
SEQUENCE 691 AA; 77631 MW; 2216B4AE7BCF31BE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              413 AS--STAKVPA---SPLPGL---ERKKTTPTPSTNSVLSTSTN------RSRNSP 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360 HKVQRSVSANPKQRRF-----SDQAGPAIPTSNSYSKKTQSNNAENKRPEEDRESGRK 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               327 GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSP- 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256 PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     270 PEKRLSLEQIQKHPWYLGGKHEPD---PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196 PEVDYWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136 KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150 YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76 HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYCHQ 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90 HPHYLKLHDYYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16 HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -MLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALE---MAQHSQRSRSVSGASTGLS 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G--YTREEIQDSLVGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAPSPS 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative 115; Mismatches 261; Indels 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20.2%; Score 828; DB 4; Length 691; 30.9%; Pred. No. 1.1e-46;
                                                                                                                                                                                                                                                                                                                                      -VOWEMEVCK-----LPRLSLNG
                                                                                                                                                                                                                                                                                                                                      665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24;
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                        밁
밁
                             Ş
                                                                   밁
                                                                                                Ş
                                                                                                                                       밁
                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proDom; pD000001; Euk_pkinase; 1.
smarT; SM00220; S_TKC; 1.
smarT; SM00165; UBA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X97630; CAA66229.1; -. HSSP; Q63450; 1A06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00107; PROTEIN_KINASE_ATP; UNKNOWN_1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00069; pkinase; 1. Pfam; PF00627; UBA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF02149; KA1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-98399868; PubMed-9730619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATP-binding; Kinase; Serine/threonine-protein kinase; Transferase
SEQUENCE 745 AA; 83204 MW; CEEA02EE762EC5DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human serine/threonine protein kinase EMK1: genome structure and cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Espinosa L., Navarro E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                        420 PASPLPGLERKKTTPTPSTNSVLSTSTNRSRNSPLLERASLGQASIQNGKDSLTMPGSRA 479
                                                                                                                                                                                                                                                                                                                                                303
                                                                                                                                                                                                                                                                                                                                                                                  327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
584 ASPSGHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVETLRPHVVGSGGNDKEK 639
                                538 PSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEE-MSSLTP------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYCHQ 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                G--YTREEIQDSLVGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAQFPS 359
                                                                                                  ---RGGGAGEQ---PPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPP 537
                                                                                                                                                                                                                                                                          HKYQRSYSANPKQRRFSDQAGPAIPTSNSYSKKTQSNNAENKRPEEDRESGRKASSTAKV 419
                                                                                                                                                                                                                                                                                                                                                                               GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD------ 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PEKRLSLEQIQKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 326
                                                                                                                                       STASASAAVSAARPROHOKSMSASVHPNKASGLPPTESNCEVPRPSTAPORVPVASPSAH 539
                                                                                                                                                                                                                                                                                                             ------PPRKRVDS-----PMLSRHGK-----RRPE-----RKSM----- 400
                                                                                                                                                                                                                                                                                                                                                                                                                   PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 245; Conservative 114; Mismatches 259; Indels 176; Gaps
                                                                     NISSSGGAPDRINF PRGVSSRSTFHAGQLRQVRDQQNLPY---
                                                                                                                                                                        STGLSSSPLSSPR-----SPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                h 20.1%; Score 827; DB 4; Length 745; Similarity 30.9%; Pred. No. 1.5e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IPR001772; kinase_Cterm.
IPR002290; Ser_thr_pkinase
IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR000719; Euk_pkinase
                                                                                                                                                                                                                                               --------EVLSITDAGGGGSPVPTRRALEMA--QHSQRSRSVSG--A 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . _
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                              밁
                                                                                                                    Ş
                                                                                                                                                             뮹
                                                                                                                                                                                                 ğ
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q96HB3 PRELIMINARY; PRT; 755 AA.
Q96HB3;
Q1-DEC-2001 (TrEMBLrel. 19, Created)
Q1-DEC-2001 (TrEMBLrel. 19, Last sequence update)
Q1-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Similar to ELKL motif kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00069; pkinase; 1.
pfam; PF00027; UBA; 1.
probom; pF000201; Euk_pkinase; 1.
prosite; pS00107; pROTEIN_KINASE_ATP; UNKNOWN_1.
pROSITE; pS50011; pROTEIN_KINASE_DOM; 1.
pROSITE; pS50101; pROTEIN_KINASE_ST; UNKNOWN_1.
pROSITE; pS00108; pROTEIN_KINASE_ST; UNKNOWN_1.
ATP-binding; Kinase; Transferase.
SEQUENCE 755 AA; 84332 MW; 493CD8C6DC3A4C06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Strausberg R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000719; Euk_pkinase.
InterPro; IPR001772; Kinase_Cterm.
InterPro; IPR002290; Ser_thr_pkinase.
InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases EMBL; BC008771; AAH08771.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE=PLACENTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     640 EEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSELHEKYMLL--CMHGTP 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            585 ----ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVL 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        730 MAFKNIASKIANEL 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               700 RRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF02149; KA1; 1
                                                                                                                                                             196 PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN 255
                                                                                                                                                                                                                                                                               150 YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
303 G--YTREEIQDSLYGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAPSPS 359
                                                                                                                                                                                                                                                                                                                                             90 HPHYLKLHDYYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                                      16 HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 75
                                                                                                                                                                                                                                                                                                                                                                                                                                          30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPS
                                                                                                                                                                                                                                                                                                                          HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYCHQ 135
                                                                                                                  PEKRLSLEQIOKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 326
                                                                                                                                                                                                 RRADMWSCGVILFALLYGALPFDDDNLRQLLEKYKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                           KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG 195
                                      GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD------ 376
                                                                              PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative 112; Mismatches 261; Indels 182; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20.1%; Score 827; DB 4; 30.8%; Pred. No. 1.5e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -VQWEMEVCK-----LPRLSLNG-----VRFKRISGTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         493CD8C6DC3A4C06 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             755 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 755;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          699
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
PROSITE; PS00107; PROTEIN_KINASE_ATP; UNKNOWN_1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
                                                          PRINTS; PR00109; TYRKINASE.
ProDom; PD000001; Euk_Pkinase; 1.
SMART; SM00220; S_TKC; 1.
SMART; SM00219; TyrKC; 1.
SMART; SM00165; UBA; 1.
                                                                                                                                            Pfam; PF00069; pkinase; 1. Pfam; PF00627; UBA; 1.
                                                                                                                                                                                                                                             -1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES EMBL; AB049127; BAB39380.1; -. HSSP; Q63450; 1A06.
                                                                                                                                                                             InterPro; IPR000719; Euk_pkinase
InterPro; IPR002290; Ser_thr_pkin
InterPro; IPR001245; Tyr_pkinase
InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                            Kato T., Satoh S., Okabe H., Kitahara O., Ono K., Kihara C., Tanaka T., Tsunoda T., Yamaoka Y., Nakamura Y., Furukawa Y.; "Isolation of a novel human gene, MARKL1, homologous to MARK3 and its
                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=21226021; PubMed=11326310;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
MAP/microtubule affinity-regulating kinase like 1.
                                                                                                                                                                                                                                                                                                      involvement in hepatocellular carcinogenesis."; Neoplasia 3:4-9(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9BYD8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9BYD8
                                                                                                                                                                                                                                                                                                                                                                                                              "ISSUE-BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                           EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 692 FTLISGPSRRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 632 PSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVT 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      732 FKRISGTSMAFKNIASKIANEL 753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           702 -- CMHGTPGHEDF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      584 PASPSGHSQGR--RGASGSIFSKFTSKFVRRNLSFRFARRNLNEPESKDRVETLRPHVVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420 VPASPLPGLERKKTTPTPSTNSVLSTSTNRSRNSPLLERASLGQASIQNGKDSLTMPGSR 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   377 ------PPRKRVDS------PMLSRHGK-----RRPE-----RKSM---- 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SGGNDKEKEEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSELHEKYMLL 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ------ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSI 631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PPSPGGGVGGAAWRSRLNSIRNSFLG-----SPRFHRRKMQVPTAEE-MSSLTP---- 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HNISSSGGAPDRTNFPRGVSSRSTFHAGQLRQVRDQQNLPY------GVT- 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----RGGGAGEQ----PPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTP 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ASTASASAAVSAARPROHOKSMSASVHPNKASGLPPTESNCEVPRPSTAPORVPVASPSA 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ASTGLSSSPLSSPR-----SPVFSFSPEPGAGDEARGGGSPTSKTOTLPSRGP----- 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HKVQRSVSANPKQRRFSDQAAGPAIPTSNSYSKKTQSNNAENKRPEEDRESGRKASSTAK 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                              Ser_thr_pkinase
                                                                                                                                                                                              Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -VQWEMEVCK-----LPRLSLNG-----VR 731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                688 AA.
```

Search completed: April 16, Job time: 104 secs

```
Дb
                                                                               밁
                                                                                                                δÃ
                                                                                                                                                           밁
                                                                                                                                                                                               Š
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 235; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
605 PAGRP 609
                                                                      575 RDRRAGGGGGG-----GVQNGP--
                                                                                                   676 SPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTR 735
                                     736 PAGAP 740
                                                                                                                                                                                616 PLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEP
                                                                                                                                                                                                                          509 RNTYVCTERPGAERPSLLPNGKENSSGTPRVPP------------
                                                                                                                                                                                                                                                                                                                                      505 PPGSPRSSGGTPLHSPLHTP-----RASPTGTPGTTPPPSPGGGVGGAAWRSRLNSI 556
                                                                                                                                                                                                                                                                                                                                                                                433 LHPKRSPTST-----KASCSTAGSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATP-binding; Kinase; Serine/threonine-protein kinase; Transferase. SEQUENCE 688 AA; 75261 MW; A03B5A7943ACD086 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                   445 LSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPSARSTPLPG 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                          390 PSDTTNG-----TSSSKGTSHSKGQRSSSSTYHRQRRHS---DFCGPSPAP 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                385 PMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSP 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     340 GMG--YTREEIKESLTSQKYN-EVTATYLLLGRKTE----EGGD---RGAPGLALARVRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             325 SLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  290 FLVLNPAKRCTLEQIMKDKWINIGYE;------GEELKPYTEPEEDFGDTKRIEVMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        265 MIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMA 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             205 EKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRG 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 145 DFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170 HYCHQKNIVHRDLKAENLLLDAEANIKIADFGFSNEFTLGSKLDTFCGSPPYAAPELFQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110 MKGLNHPNIVKLFEVIETEKTLYLVMEYASAGEVFDYLVSHGRMKEKEARAKFRQIVSAV 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            85 LKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSAL 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50 PEEQPHYGNYRLLRTIGKGNSAKVKLARHILTGREVAIKIIDKTQLNPSSLQKLFREVRI 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25 POHAQYVGDYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAI 84
                                                                                                                                                                                                                                                                                                     SRGLPPSS---PMVSSAHNPNKAEIPERRKDSTSTPNNLPP-----
                                                                                                                                             -----ASPS-SHSLAPPSGERS--RLARGSTI-----RSTFHGGQV
                                                                                                                                                                                                                                                           RNSFLGSPR-FHRRKMQVPTAEEMSSLTPESSPELAKRSWEGNFISLDKEEQIFLVLKDK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20.1%; Score 826; DB 4; Length 688; 32.4%; Pred. No. 1.5e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93; Mismatches 223; Indels 174; Gaps
                                                                  -----PASPTLAHE---AAPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20;
```

```
OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                Result
No.
                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                      Database :
pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                  Score
April 16, 2003, 12:22:22 ; Search time 28 Seconds (without alignments) 1152.449 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                       112892 segs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-003-690-2
4108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MSSGAKEGGGGSPAYHLPHP......PRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                                                                                                                                  Match
                                                                                                                                                                                                                                                                         Query
                                                                                                                                                                                                                                                                                                                                     SwissProt_40:*
GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                  Length DB
SN1L_MOUSE
GIN4_YEAST
SNF1_YEAST
SNF1_YEAST
                                                                                                                                                                                                           KEMK_MOUSE
SN1L_RAT
                                                                                                                                        SNF1_CANTR
AAK1_HUMAN
AAK1_RAT
KCC4_YEAST
SNF1_CANGA
                                                            RKI1_SECCE
YNA3_CAEEL
Y537_HUMAN
CDR1_SCHPO
KIN1_YEAST
HUMK_HUMAN
               KIN4_YEAST
KIN2_YEAST
HUNK_MOUSE
KCCB_HUMAN
ULK1_HUMAN
ASK2_ARATH
                                                                                                                                                                                                                           KI10_ARATH
                                                                                                                  SNF1_CANAL
                                                                                                        KIN1_SCHPO
                                                                                                                         AAK2_RAT
                                                                                                                                 AAK2_HUMAN
                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                       p34244 saccharomyc p57059 homo sapien p27448 homo sapien p38997 arabidopsis Q05512 mus musculu Q971U5 rattus norv Q60670 mus musculu Q12263 saccharomyc p74536 schizosacch p06782 saccharomyc Q94168 candida tro Q13131 homo sapien p54645 rattus norv
  Q01919
P13186
088866
Q13554
Q13554
075385
P43292
Q13557
P15791
                                                                                                                                                                                                                                                                   Description
                                                                                                                    P54646 homo sapien
Q09137 rattus norv
P52497 candida alb
                                                                                                                                          P25389 saccharomyc
Q00372 candida gla
                                       saccharomyc
saccharomyc
mus musculu
                                                                                                    schizosacch
secale cere
         homo sapien
homo sapien
arabidopsis
homo sapien
                                                                              homo sapien
schizosacch
                                                                                              caenorhabdi
                                                                      saccharomyc
  rattus norv
                                                              homo sapien
    SQ
    ACT_SITE
SEQUENCE
```

			-					
DR DR DR DR DR DR SQ SQ SQ	DR D	888888888	CCPRRRR	RA RA	000000000000000000000000000000000000000	RESU KKK1 ID AC DT		and the second
				ST SE	Pro San San NCC	SULT 1 KKX1_YEAS KKX1_YEAS 01-F	4-4-4 01-4-10	35 44 30 30 30 30 30 40 30 30 30 30 30 30 30 30 30 30 30 30 30
Piam; PF00069; pkinase; Probom; PF000001; Euk_p Probom; PD000001; Euk_p SMART; SM00220; STKC; PROSITE; PS00107; PROTE PROSITE; PS00108; PROTE PROSITE; PS00118; PROTE PROSITE; PS00116; PROTE Hypothetical protein; T ATP-binding. B1 369 DOMAIN B7 95 BINDING 87 95 BINDING 110 ACT_SITE 239 239 SEQUENCE 1518 AA; 16	+ + = 0 = = = 0	tween e Europe by dified tities send a	"DNA sequence analyphysically localiz frames, including kinases."; yeast 9:1149:1155; reast 9:MILARITY: BINIMA SUBFAMILIA	[1] SEQUENCE FROM N.A. STRAIN-S288C; MEDLINE-94078677; P Pallier C., Valens Bolotin-Fukuhara M.	Probable serine/threonine-F YKL101W OR YKL453. Saccharomyces cerevisiae (E Eukaryota; Fungi; Ascomycot Saccharomycetales; Saccharo NCBI_TaxID=4932;	T 1 YEAST KKK1_YEAST P34244; P34244 01-FEB-1994 01-FEB-1994	1.47	482.5 482.5 479.5 479.5 479.5 478.5 478.5
PF00069; pki pF000001; pF0000001; pS000007; pS PS00107; pS PS00108; pS PS00118; pS PS00118; pS PS00119. PS PS00119. PS PS P	33; CAA50 01; CAA81 8; S37928 4; S39084 50; 1A064 50; 1A067 1584; YKLJ 15800719	SWISS-PROT enty enen the Swiss European Bioinfo by non-profit by non-profit fied and this si ties requires a send an email to	sequence analysis ally localizes the contract of the contract	OM N.A.	rine/th YKL453. YKL453; es cere Fungi; etales;	STA (Rel. (Rel.		11.6 11.6
kinase; 1. ; Euk_pkinas S_TKC; 1. ; PROTEIN_KI ; PROTEIN_	CAA50456.1; CAA61941.1; S37928. S39084. S39084. ; YKL101W. ; YKL101W. ; YKL10719; Euk.;	entry is cop lss Institute informatics jfit institu ls statement ls a license to license	sis of the homo ongs	ubMe	reonine-pro visiae (Bak Ascomycota; Saccharomy	STANDARD; l. 28, Crea! l. 28, Last		370 1 1051 1 542 1 542 1 542 1 374 1 478 478
e; 1.  NASE_ATP; 1.  NASE_DOM; 1.  NASE_DOM; 1.  PROTEIN KINASE.  ATP (BY SIMILARI  BY SIMILARITY.  MW; 803F84F75312	kinase.	yright. It is pro of Bioinformatic Institute. There utions as long as utions to removed. agreement (See ht eisb-sib.ch).	7 kb fragment of gene and reveals of the KIN1/KIN2 E SER/THR FAMILY	524; V., Fukuhara H.,	rotein kinase YKI laker's yeast). .a; Saccharomycoti mycetaceae; Sacch	PRT; 1518 AA. ated) it sequence update) it annotation update)	ASK1_ KPBH_ KCCG_ AI	1 KCC1_HUMAN 1 ULK1_MOUSE 1 KCCB_MOUSE 1 KCCB_RAT 1 KCCA_RAT 1 KCCA_HUMAN 1 KCCA_HUMAN 1 KCCA_HUMAN
reonine-protein kinase; ITY). ITY). 241DD CRC64;		duced through a collaboration s and the EMBL outstation are no restrictions on its its content is in no way usage by and for commercial tp://www.isb-sib.ch/announce/	yeast chromosome XI eight new open reading and SNF1 protein	Cheret G., Sor F.,	W (EC 2.7.1). Saccharomycetes; myces.		P43291 arabidopsis Q9db30 mus musculu P11730 rattus norv	Q14012 homo sapien O70405 mus musculu P28652 mus musculu P08413 rattus norv P25323 dictyosteli O63450 rattus norv O9uqm7 homo sapien P11275 rattus norv Q13555 homo sapien

```
RESULT 2
SN1L_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 말
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                        SN1L_HUMAN
                                   16-OCT-2001
                                                      16-OCT-2001
                                                                           16-OCT-2001
                                                                                                     P57059;
                                                                                                                                                                                                                         857 QLQKKNDRPS----------PLKPIQHQELRVNSLPNDQGKPSLSLDPRR 896
                                                                                                                                                                                                                                                                   712 QLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQP-----PPGRPDPELSSSPRR 761
                                                                                                                                                                                                                                                                                                                806 SFPIFEK----ENTLSSSYLEEQKPKR-----AALSDITNSFNKMNKQEGMRIEKKIQRE 856
                                                                                                                                                                                                                                                                                                                                                                                                     750 DTQRQRQNDTKSSADTFTISGVSTNKENEGPEYP----TKIEKNQFNMSYKPSENMSGLS 805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            695 DDPLPSKKPASENVNKSEPHSLESDSDFEILCDQILFGNALDRILEEEED-----NEKER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       574 -----PTAEEMSSLTPESSPE-----LAKRSWFGNFIS--LDKEEQIFLVLKDK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                538 PVLAQKSQFSINTLSQPESDKAEAEAVTLPPAIPIFNAS-----SSRIFRNSYTSISS 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 389 RHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQ-----RSRSVSGASTGL-- 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      378 NKVLRKMRKDNMARGKSNSD--LHLLNNVSPSIVTLHSKGEIDESILRSLQILWHGVSRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                234 DNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPW------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       174 DFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPEDD 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71 ----SESVLMK------VEREIAILKLIEHPHYLKLHDVYENKKYLYLVLEHVS 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKL------70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                          ---VFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQ-A 711
                                                                                                                                                                                                                                                                                                                                                                                                                                               LHTPRASPTGTPGTTPPPSPGGGVGGAAWRSRLNSI-RNSFLGSPRFHRRKMQV------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RSRRSLRLSNSRLSLSASTSRETVHDNEMPLPQLPKSPSRYSLSRRAIHASPSTKSIHKS 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LITAKLLQKPMSEEKLFYSLLLQYKQRHSISLSSSSENKKSATESSVNEPRIEYASKTAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LSRKNIAAT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LPSRGPRGGGAGEQPPPPSARST-----PLPGPPGSP-----RSSGGTP----LHSP 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----SSSPLSSPRS------PVFSFSPEPGAGDEARGGGSPTSKTQT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NTGLR-----SENNDVKTLHSLEI--HSEDTSTVNQNNAITGVNTEINA 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNIKKLLLKVQSGKYQMPSNLSSEARDLISKILVIDPEKRITTQEILKHPLIKKYDDLPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DFGMAALELPNKLLKTSCGSPHYASPEIVMGRPYHGGPSDVWSCGIVLFALLTGHLPFND 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKN-NIRIA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SNVSSPSIASREHSNHSQTNPYGIEREIVIMKLISHTNVMALFEVWENKSELYLVLEYVD 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VGPWKLGKTLGKGSSGRVRLAKNMETGQLAAIKIVPKKKAFVHCSNNGTVPNSYSSSMVT 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----YLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDRE
                            (Rel. 40,
(Rel. 40,
(Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20.4%; Score 836; DB 1; Length 1518; ilarity 28.5%; Pred. No. 1.8e-26; Conservative 135; Mismatches 261; Indels 24
                                                                                                                        STANDARD;
                       Last sequence update)
Last annotation update)
                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----VAARRTLQNSASKRSLYSLQSISKRSLNLNDLLVF 694
                                                                                                                   Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 246; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29;
                                                                                  B
                                                                                                                             V
                                                                                                                                                                         밁
                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RX MEDLINE-20289799; pubMed-10830953;
RA Hattori M., Fujiyama A., Taylor T.D., Watanabe H., Yada T.,
RA Hattori M., Fujiyama A., Ishii K., Totoki Y., Choi D.-K., Soeda E.,
RA Park H.-S., Toyoda A., Ishii K., Totoki Y., Choi D.-K., Soeda E.,
RA Ohki M., Takagi T., Sakaki Y., Taudien S., Blechschmidt K., Polley A.,
RA Menzel U., Delabar J., Kumpf K., Lehmann R., Patterson D.,
RA Reichwald K., Rump A., Schillhabel M., Schudy A., Zimmermann W.,
RA Reichwald K., Rump A., Schillhabel M., Schudy A., Zimmermann W.,
RA Rosenthal A., Kudoh J., Shibuya K., Kawasaki K., Asakawa S.,
Shintani A., Sasaki T., Nagamine K., Mitsuyama S., Antonarakis S.E.,
RA Minoshima S., Shinizu N., Nordsiek G., Hornischer K., Brandt P.,
RA Scharfe M., Schoen O., Desario A., Reichelt J., Kauer G., Bloecker H.,
RA Scharfe M., Schoen O., Desario A., Reichelt J., Kauer G., Bloecker H.,
RA Ramser J., Beck A., Klages S., Hennig S., Riesselmann L., Dagand E.,
RA Wehrmeyer S., Borzym K., Gardiner K., Nizetic D., Francis F.,
RA Wehrmeyer S., Borzym K., Gardiner K., Nizetic D., Francis F.,
RA Lehrach H., Reinhardt R., Yaspo M.-L.;
"The DNA sequence of human chromosome 21.";
Nature 405:311-319 (2000).
                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                        BINDING
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transferase; Serine/threonine-protein kinase; ATP-binding.
DOMAIN
27
281
PROTEIN_KINASE, MTP-binding.
DOMAIN
27
281
PROTEIN_KINASE; ATP-binding.
DOMAIN
27
281
PROTEIN_KINASE; ATP-binding.
DOMAIN
33
41
ATP (BY SIMILARITY).
BINDING
56
ATP (BY SIMILARITY).
BACT_SITE
149
149
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00220; S_TKC; 1.
SMART; SM00165; UBA; 1.
208 DGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIE 267
                                                                  144 HIVHRDLKTENLLLDGNMDIKLAGTEDFGFGNFYKSGEPLSTWCGSPPYAAPEVFEGKEY
                                                                                                          151 SICHRDIKPENILIDEKNNIRIA---DFGMASLQVGDSLLETSCGSPHYACPEVIKGEKY 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProDom; PD000001; Euk_pkinase; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002290; Ser_thr_pkii
InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genew; HGNC:11142; SNF1LK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AP001751; BAA95536.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                 91 PHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSY 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Probable serine/threonine protein kinase SNF1LK (EC 2.7.1.-).
                                                                                                                                                                                                                                              24 VGFYDIERTLIGKGNFAVVKLARHRVTKTQVAIKIIDKTRLDSSNLEKIYREVQLMKLLNH
                                                                                                                                                                                                                                                                                        31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SNF1LK.
                                                                                                                                                         PHIIKLYQVMETKDMLYIVTEFAKNGEMFDYLTSNGHLSENEARKKFWQILSAVEYCHDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SNF1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     605705;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P24941; 1AQ
                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000719; Euk_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                   786 AA;
                                                                                                                                                                                                                                                                                                                                   Conservative 103; Mismatches 301; Indels 150; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                      85252 MW;
                                                                                                                                                                                                                                                                                                                                                                 19.9%; Score 816; DB 1 30.9%; Pred. No. 6e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                   FB44EE7CAF87CB1A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                  DB 1; Length 786;
```

Š

RRRRE

밁

83

26;

뭉 Ş 밁 δÃ ₽ Ş В Ş 밁 Š 밁 S 묽 Ş

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 3
KP78_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                268
                                                                                                                                                Maheshwari K.K., Som S., Parsa I.;
Submitted (JAN-1992) to the EMBL/GenBank/DDBJ databases.

-I- MISCELLANEOUS: MARKER PROTEIN LOST IN CHEMICALLY INDUCED
-TRANSPLANTABLE CARCINOMA AND PRIMARY CARCINOMA OF HUMAN PANCREAS.

-I- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                    01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
Putative serine/threonine-protein kinase P78
                                                                                                                                                                                                                                                                                                                                                                                                                  KP78_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 204
            the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                          Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           582 LTQGLKAF----RQQLRKTTRTKGFLGLNKIKGLARQVCQAPASRASRGGLSPFHAPAQS 637
                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                           NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             737
                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -CARPGPARQPRPRSSDLSGLEVPQEGLSTDPFRPALLCPQPQTLVQSVLQAEMDCELQS 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MLSRHG-KRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTG--LSS 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VDPARRITIAQIRQHRWM-----RAEPCL-PGPACPAFSAHSYTSNLGDYDEQALGIMQT 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPG-RRVAMRSLPSN-GELDPDVLESMAS 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGPQLDIWSLGVVLYVLVCGSLPFDGPNLPTLRQRVLEGRFRIPFFMSQDCESLIRRMLV 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-----SLSHSVLSQTS-FRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSP 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAEEMSSLTPESSPELAKRSWEGNFISLDKEEQIFLVLKDKPLSSIK---ADIVHAFLSI 631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACSPVRL--ASPFLGSQSATPVLQAQGGLGGAV-----LLPVSF-----QEGRRASDTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---SPLHTPRASP-TGTPGTTPPPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVP 574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RHTLAEVSTRLSPLTAPCKFVSPSTTASPAEGTSSDSCLTFSASKSPAGLSGTPATQGLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GEQPPPPSARSTPLPGP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SLQWPLFFPVDASCSGVFRPRPVSPSSLLDTAISEEARQGPGLEEEQDTQESL-PSSTGR 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S-----PLSSPRSPVFSFSP-----EPGAGDEARGGGSPTSKTQTLPSRGPRGGGA 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGV--DRQRTVESLQNSSYNHFAAIYYLLLERLKEYRNAQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSP 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APFVIAPCDGPGAAPLPSTLLTSGLPLLPPPLLQTGASPVASAAQLLDTH------LH 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RR-----DGSGGGGIYSVTFT----LISGPSRRFKRVVETIQAQLLSTHDQPSVQALAD 727
                                                                                                                                        NIM1 SUBFAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IGTGPTALPAVPPPRLARLAPG 758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PGLHGGAAGSREGWSLLEEVLEQQRLLQLQHHPAAAP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKNGAQTRPAGAPPRSLQPPPG 749
                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      713 AA
                                                                                                                                                                                                                                                                                                                                           (EC 2.7.1.-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---GCSQAPQPAP 684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                 ΩV
                                                                                                                Š
                                                                                                                                                밁
                                                                                                                                                                            Š
                                                                                                                                                                                                                                      S
                                                                                    밁
```

```
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACT_SITE SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transferase; Serine/threonine-protein kinase; ATP-binding.
DOMAIN 56 307 PROTEIN KINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; Q63450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M80359; AAA59991.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00069; pkinase; Pfam; PF00627; UBA; 1. Pfam; PF02149; KA1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MIM; 602678;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; S27966; S27966.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00165; UBA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NP_BIND
                                                                                                                                                                                       479
                                                                                                                                                                                                                                                                                                                                                                              377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  336 VGMG------YSQEEIQESLSKMKYDEITATYLLLGRK------SSEVRPSSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 324 ASLGCFRDRERLHRELRSEEENQE---KMIY-----YLLLDRKERYPSCEDQDLPPRND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       232 PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKRFLVLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     172 KRIVHRDLKAENLLLDADMNIKIADFGFSNEFTVGGKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150 YSICHRDLKPENLLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112
                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                427
                                                                                                                                                                                                                                                                                                                               426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
584 GSTTLFSKLTSKLTRSRNVSAKQKDENKEAKPRSLRFTWSMKTTSSMDPGDMMREIRKVL 643
                                            595 ----WFGNFIS-LDKEEQIFLVLKD-----KPLS-----SIK------ADIVHAFLSIP 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52 HIGNYRLLKTIGKGNFAKVKLARHILTGREVAIKIIDKTQLNPTSLQKLFREVRIMKILN 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Госа
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEKRLSLEQIQKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGEL----DPDVLESM 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HPNIVKLFEVIETQKTLYLIMEYASGGKVFDYLVAHGRMKEKEARSKFRQIVSAVQYCHQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HPHYLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                         LNNSTGQSPHHKVQRSVSSSQKQRR------YSDHAGPGIPSVVAYPKRSQTSTAD
                                                                                                                                                                                                                                                                                                                                                                                                                      VD-----PPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSP----VPTRRALEMAQ 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        237;
                                                                                                                                                                                                                                                                                                                             HSQR----SRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPS 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIKRGTLEQIMKDRWINAG-HEEDELKPFVEP---
                                                                                                                                        GGGVGGAAWRSRL-----NSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRS-
                                                                                                                                                                                    SNTASGGM-----TRRNTYV----CSERTTDDR--HSVIQNGKENST-IPDQRTPVAS
                                                                                                                                                                                                                                 {\tt RGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSP}
                                                                                              THSISSAATPDRIRFPRGTASRSTFHGOPR-ERRTATYNGPPASPSLSHEATPLSQTRSR
                                                                                                                                                                                                                                                                                SDLKEDGISSRKSTGSAVGGKG---IAPASPMLGNASNPNKADIPE----RKKSSTVPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGNC:6897; MARK3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PD000001; Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPR002290; Ser_thr_pki
IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR000719; Euk_pkinase.
IPR001772; Kinase_Ctern
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  713 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative 112; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1A06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIKC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79903 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ser_thr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kinase_Cterm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19.4%; Score 797; DB 1; 32.0%; Pred. No. 3.1e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1CA78EB22620A228 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----ELDISDQKRIDIM 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                                            478
                                                                                                                                                                                                                                                                                                                                                                                      426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              374
```

```
RA Salanoubat M., Lemcke K., Rieger M., Ansorge W., Unseld M.,
Ra Fartmann B., Valle G., Bloecker H., Perez-Alonso M., Obermaier B.,
RA Fartmann B., Valle G., Bloecker H., Perez-Alonso M., Obermaier B.,
RA Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,
RA Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,
RA Mincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
RA Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
RA Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
RA Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
RA Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
RA Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
RA Wincker P., Cattolico L., Weissenbach J., Sordan N., Bangert S., Nangelo M., Pallavicini A., Toppo S., Simionati B.,
RA Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,
RA Conrad A., Hornischer K., Kauer G., Loehnert T.-H., Nordsiek G.,
RA Navarro P., Collado C., Perez-Perez A., Ottenwaelder B., Duchemin D.,
RA Cooke R., Laudie M., Berger-Llauro C., Purnelle B., Masuy D.,
RA Monfort A., Argiriou A., Flores M., Liguori R., Casacuberta E.,
RA Monfort A., Argiriou A., Flores M., Liguori R., Vitale D.,
RA Mayer K.F.X., Kaul S., Town C.D., Koot H.L., Tallon L.J., Jenkins J.,
RA Mayer K.F.X., Kaul S., Town C.D., Koot H.L., Tallon L.J., Jenkins J.,
RA Pai G., Militscher J., Sellers P., Gill J.E., Fuldi C.Y., Shea T.P.,
RA Pai G., Militscher J., Sellers P., Gill J.E., Feldblyum T.V.,
RA Pai G., Militscher J., Noakamura Y., Salzberg S.L., White O., Venter J.C.,
RA Fraser C.M., Kaneko T., Nakamura Y., Sato S., Kato T., Asanizu E.,
RA Sasamoto S., Kimura T., Idesawa K., Kawashima K., Kishida Y.,
RA Watanabe A., Yamda M., Yasuda M., Tabata S.,
Takeuchi C., Wada T.,
Thaliana. ".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                 MEDLINE=95115691; PubMed=7816049;
       le Guen L.,
                                                                             STRAIN-CV.
                                                                                                           SEQUENCE OF 1-19 FROM N.A.
                                                                                                                                                                         Nature 408:820-822(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KIIO_ARATH STANDARD; PRT; 512 AA. Q38997; 039076; 004728; 15-JUL-1999 (Rel. 38, Created) 15-JUL-1999 (Rel. 38, Last sequence update) 15-JUL-1999 (Rel. 41, Last sequence update) 5NF1-related protein kinase KINIO (EC 2.7.1.-) (AKINIO) (Rel. 41, Last annotation update) 5NF1-related protein kinase KINIO (EC 2.7.1.-) (AKINIO) (RAT301090 OR T4PI3.22 LANDO OR AT301090 OR T4PI3.22 LANDO OR AT301090 (MOUSE-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosida core endicots; Rosida co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=21016720; PubMed=11130713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-CV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (DEC-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-cv. Columbia;
Lessard P., Kreis M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

MEDLINE-93013041; PubMed=1339373;

le Guen L., Thomas M., Bianchi M., Halford N.G., Kreis M.;

"Structure and expression of a gene from Arabidopsis thaliana encoding a protein related to SNF1 protein kinase.";

Gene 120:249-254(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ARATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         691 KRISGTSIAFKNIASKIANEL 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               644 DANNCDYEQRE-RFLLFCVHGDGHAENLVQWEMEVCK-----LPRLSLNG-----VRF 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TLISGPSRRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTF 692
                                                                      Columbia;
Thomas M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Columbia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thomas M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rosidae;
```

```
δÃ
                                                                                              В
                                                                                                                                               Qy
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                   ΩV
                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOLUTION OF THE TAIL OF THE TA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NP_BIND
333 ERLHRELRSEEENQEKMIYYLLLDRKER----YPSCEDQDLPPRNDVDPPRKRVDSPMLS
                                                                                                                                                                                                       199
                                                                                                                                                                                                               213 DMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEK
                                                                                                                                                                                                                                                                                    139 VHRDLKPENLLLDSKCNVKIADFGLSNINRDGHFLKTSCGSPNYAAPEVISGKLYAGPEV 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00107; PROTEIN_KINASE_ATP; 1
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART; SM00220; S_TKC;
SMART; SM00165; UBA; 1
                                                                                                                                                                                                                                                                                                                                      153 CHRDLKPENILLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS; PR00109; TYRKINASE.
ProDom; PD000001; Euk_pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00069; pkinase; 1.
Pfam; PF00627; UBA; 1.
Pfam; PF02149; KA1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M93023; AAA32736.1; -. EMBL; X79707; CAA56146.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content modified and this statement is not removed. Usage by arentities requires a license agreement (See http://www.isb-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000449; UBA_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000719; Euk_pkinase.
InterPro; IPR001772; Kinase_Cterm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AC008261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MO1. Gen. Genet. 245:390-396(1994).
-!- FUNCTION: MAY PLAY AN IMPORTANT ROLE IN A SIGNAL TRANSDUCTION CASCADE REGULATING GENE EXPRESSION AND CARBOHYDRATE METABOLIS
                                                                                                                                                                                                                                                                                                                                                                                           79 IIRLYEVIETPTDIYLVMEYVNSGELFDYIVEKGRLQEDEARNFFQQIISGVEYCHRNMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -I- TISSUE SPECIFICITY: EXPRESSED IN ROOTS, SHOOTS AND LEAVES.
                                                                                                                                                                                                                                                                                                                                                                                                                                          93 VLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSI 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Gene density and organization in a small region of the Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 YRLEKTIGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVL-MKVEREIAILKLIEHPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     thaliana genome."
                                                                          RVTIPEIRQHPWFQA--HLPRYLAVPPPD-----TVQQAKKIDEEILQEVINMGF--DR
                                                                                                                            RLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDR 332
                                                                                                                                                                                 DVWSCGVILYALLCGTLPFDDENIPNLFKKIKGGIYTLPSHLSPGARDLIPRMLVVDPMK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YKLGRTLGIGSFGRVKIAEHALTGHKVAIKILNRRKIKNMEMEEKVRREIKILRLFMHPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SNF1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HIGHER PLANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X94757; CAA64384.1; -. Q63450; 1A06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR002290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            512 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Serine/threonine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAF26165.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     271
33
48
142
175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58373 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ser_thr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 795.5; DB Pred. No. 2.6e-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PHOSPHORYLATION (AUTO-) (BY SIMILARITY).
5A18655A0AA506DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYDRATE METABOLISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                           388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 commercia]
                                                                                                                                                                                 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ġ
```

B

309 NHLIESLRNRTQNDGTVTYYLILDNRFRASSGYLGAEFQETMEGTPRMHPAESVASPVSH 368

```
SON TO THE REPORT OF THE PROPERTY OF THE PROPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                       Ş
                                                                                밁
                                                                                                                                   Ş
                                                                                                                                                                                            В
                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local (
                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Putative serine/threonine-protein kinase EMK (EC 2.7.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q05512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEMK MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transferase; Serine/threonine-protein kinase; ATP-binding.
DOMAIN 53 304 PROTEIN_KINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mamm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chromosome 19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-93364122; PubMed-8358177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE-Embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; X70764; CAA50040.1; -. HSSP; Q63450; 1A06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00069; pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inglis J.D., Lee M., Hill R.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ProDom; PD000001; Euk_pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Emk, a protein kinase with homologs in yeast maps to mouse
     150 YSICHRDLKPENLLLDEKNNIRIADEGMASIQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                         90
                                                                                                                                                                                                  49
                                                                                                                                                                                                                                                     30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NIM1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 n. Genome 4:401-403(1993).
SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MGI:99638; Emk.
                                                                                   HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                  HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF02149; KA1; 1.
                                                                                                                                                                                                                                                                                                                 238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SM00220;
Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR000719; Euk_pkinase.
IPR001772; Kinase_Cterm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR002290; Ser_thr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                774 AA;
                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S_TKC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                   85874 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                         19.2%; Score 788; DB 1; 30.1%; Pred. No. 7.5e-25;
  119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                   02BF8D7BF443483A CRC64;
                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    774 AA
                                                                                                                                                                                                                                                                                                                                                                          DB 1; Length 774;
                                                                                                                                                                                                                                                                                                                       261;
                                                                                                                                                                                                                                                                                                                    Indels 172;
                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                             27;
```

```
DI DI N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SN1L_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O9RIU5; O9RO81;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
probable serine/threonine protein kinase SNFILK (EC 2.7.1.-) (Salt-inducible protein kinase) (Protein kinase KID2).
SNFILK OR SIK OR KID2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 445 T-AKVPASPLPGLDRKKTTPA---PSTNSVLSTSTNRSRNSPLLD-RASLGQASIQNGKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    169 KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKIDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SN1L_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         385 SAPSPSHKVQRSVSANPKQRRSSDQAVPAIPTSNSYSKKTQSNNAENKRPEEETGRKASS
                                                                                                                                                                                                                                                            STRAIN-Sprague-Dawley; TISSUE-Adrenal gland; MEDLINE-99330184; PubMed-10403390;
                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              512 SGGTPLHSPLHTPRASPTGTPGTT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461 ----AGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPP-----PPSARSTPLPGPPGSPRS
                                                                                                                                                         Wang Z., Takemori H., Halder S.K., Nonaka Y., Okamoto M.; "Cloning of a novel kinase (SIK) of the SNF1/AMPK family from high salt diet-treated rat adrenal.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      644 FRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFK 703
                            Feldman J.D., Vician L., Crispino M., Hoe W., Baudry M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      763 NIASKIANEL 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  704 RVVETIQAQL 713
                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TDAGGGGSPVP--TRRALEMAQHSQRSRSVSGASTGLS-SSPLSSPRSPVFSFSPEPG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |:|| ||||: |: |:||| || ||::| |:| |: ||::| |::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||: :: ||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::||::|::||::||::|::|::|::||::|::||::|::|::|::|::||::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVETLRPHVVGSGGTDKDKEEFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --- VPVASPSAHNISSSSGAPDRTNFPRGVSSRSTFHAGQLRQVRDQQNLPYGVTPASPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLTMPGSRASTASASAAVSAARPRQHQKSMSASVHPNKASGLPPTESNCEVPRPSTAPQR 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RDRVDGVNGLHTEEIQDSLVGQRYN-EVMATYLLLGYKSSEPEGDTITLKPRPSADLTNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RDR-----ERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PSKRGTLEQIMKDRWMNVG-HEDD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCF 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSELHERYMLL--CVHGTPGHEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEE-MSSLTP---------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTS
                                                                                                                                       453:135-139(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----PPRKRVDS------PMLSRHGK------RRPERKSMEVLSI 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VQWEMEVCK-----LPRLSLNG-----VRFKRISGTSMAFK 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----pppspg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --ELKPYV-EPLLTTGP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            584
```

Herschman H.R.,

```
SO THE TEXT OF THE CONTROL OF THE TEXT OF THE TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS50011; PROTEIN_KINASE_DOW; 1.

Transferase; Serine/threonine-protein kinase; ATP-binding.
DOMAIN 27 278 PROTEIN KINASE.

NP_BIND 3 41 ATP (BY SIMILARITY).
BINDING 56 ATP (BY SIMILARITY).
BINDING 56 ATP (BY SIMILARITY).
ACT_SITE 149 149 BY SIMILARITY).
CONFLICT 473 473 R -> K (IN REF. 2).
SEQUENCE 776 AA; 84908 MW; 7BF745AF28F17E6E CRC64;
489 GEQPPPPSARSTPLPGPPGSPRSSGGTPLH-SPLHTP-----RASPT-GTPGTTPPP 538
                                                                                                                            414
                                                                                                                                                                                                  442
                                                                                                                                                                                                                                                                                                                                                                                                            318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00107; PROTEIN_KINASE_ATP; 1
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SMART; SM00220; S_TKC; 1. SMART; SM00165; UBA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            271 EKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSN-GELDPDVLESMASLGCF 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             211 RADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEP 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     144 HIVHRDLKTENLLLDGNMDIKLADFGFGNFYKPGEPLSTWCGSPPYAAPEVFEGKEYEGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00069; pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (NOV-1998) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The Kid2 gene encodes a protein kinase induced by depolarization brain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEH 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24
                                                                                                   SSLQPLFFPLDTNCSGVFRHRSISPSSLLDTAISEEARQGPSLEEEQEV------ 462
                                                                                                                                                                        SS-----PLSSPRSPVF---SFSP----EPGAGDEARGGGSPTSKTQTLPSRGPRGGGA 488
                                                                                                                                                                                                                                          ---RNSDLSSLEV------PQEILPCDPFRPSLLCPQPQALAQSVLQAEIDCDLH 413
                                                                                                                                                                                                                                                                                                                HGKRRPERKSMEVLSITDAGGGGSPV-----PTRRALEMAQHSQRSRSVSGA--STGLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                        RDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLSR 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AKRITIAQIRQHRWM-----QADPTLLQQDDPAFSMQGYTSNLGDYNEQVLGIMQALGI-
                                                                                                                                                                                                                                                                                                                                                                                      -DRQRTVESLQNSSYNHFAAIYYLLLERLREHRSTQ-----PSSRATPAPAR--QPQL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PNIIKLYQVMETKDMLYIVTEFAKNGEMFDYLTSNGHLSENEARKKFWQILSAVEYCHNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PHYLKLHDYYENKKYLYLVLEHYSGGELFDYLYKKGRLTPKEARKFFRQIVSALDFCHSY 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VGFYDVERTLGKGNFAVVKLARHRVTKTQVAIKIIDKTRLDSSNLEKIYREVQLMKLLNH 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.
SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SNF1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AB020480; BAA82673.1; -. AF106937; AAF14191.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P24941; 1AQ1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PD000001; Euk_pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPR002290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000719; Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                104; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 784; DB 1; Pred. No. 1.1e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -> K (IN REF. 2).
7BF745AF28F17E6E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 776;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                             367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28;
```

밁 δÃ В Qy 밁 Š 밁 Ş В Š 멍 Ş 밁 Š В Ş

EMBL; U11494; AAA67926.2; -.
HSSP; P24941; 1AQ1.
MGD; MGI:104754; Snfilk.
InterPro; IPR000719; Euk\_pkinase.
InterPro; IPR0002290; Ser\_thr\_pkinase.
InterPro; IPR0001245; Tyr\_pkinase.
InterPro; IPR000449; UBA\_domain.

or send an email to license@isb-sib.ch).

ProDom; PD000001; Euk\_pkinase; Pfam; PF00069; pkinase; PRINTS; PR00109; TYRKIN

TYRKINASE.

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                      MEDLINE-95200798; PubMed=7893599;
Ruiz J.C., Conlon F.L., Robertson E.J.;
"Identification of novel protein kinases expressed in the myocardium of the developing mouse heart.";
Mech. Dev. 48:153-164(1994).
1- TISSUE SPECIFICITY: EXPRESSED IN LUNG, SKIN, OVARY, HEART AND STOMACH, NO EXPRESSION IN BRAIN, LIVER OR SKELETAL MUSCLE.
-1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
SNE1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SNF1LK OR MSK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Probable serine/threonine protein kinase SNFiLK (EC 2.7.1.-) (HRT-20) (Myocardial SNF1-11ke kinase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1997 (Rel. 35, Created)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SN1L_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 1-435 FROM N.A., AND TISSUE SPECIFICITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rissu==mbryo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 686 VLTPCDG 692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SLQPPPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----CTASSREGRSLLEEVLHQQRLLQLQHHSAVS--SDYQQAPQLSPV---PY 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGIYSVTFTLISGPSRRFKRVVETI--QAQLLSTHDQPSVQALADEKNGAQTRPAGAPPR 742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----IKGLARQV-CQSSIRG---SRGGMSTFHTPA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PVSFQEGRRASDTSLTQGLKAFRQQLRKNARTKGFLGLNK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FSASEGPAGLGGGLATPGLLGTSSPVRLASPFLGS-----QSATPVLQSQAGLGATVLP 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----SPGGGYGGAAWRSRLNS----IRNSFLGSPRFHRRKNQVPTAEEMSSLTPESSP 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----QEPLPGSTGRRHTLAEVSTHFSPLNPPCIIVSSSAAVSPSEGTSSDSCLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (OCT-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND REVISIONS TO 8; 16-18; 44-45; 316 AND 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----ELAKRSWFGNFISLDKEEQIFLVLKDKPLSSIKADI 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                779 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----PSSGLQG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        684
```

```
DR DR DR DR FT FT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                   Ş
                                                                                                                                                               밁
                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                               밁
                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 235;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BINDING
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00108; PROTEIN_KINASE_ST; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

Transferase; Serine/threonine-protein kinase; ATP-binding.

DOMAIN

27

278

PROTEIN KINASE.

PROTEIN KINASE.

PROTEIN KINASE.

PROTEIN KINASE.

PROTEIN KINASE.

PROTEIN KINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART; SM00220; S_TKC; 1.
SMART; SM00219; TyrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144 HIVHRDLKTENLLLDSNMDIKLADFGFGNFYKPGEPLSTCVGSPPYAAPEVFEGKEYEGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151
                                                                                                                                                                 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                         487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   412 LHSSLQPLLFPLDTNCSGVFRHRSISPSSLLDTAISEEARQGPSLEEEQEV------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   362 --TRQPQLRSSDLSSLEVPQEILPCD-----PFRPSLLCPQPQALAQSVLQAEIDCD 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           390 HGKRRPERKSMEVLSI-----TDAGGGGSPVPTRRALEMAQHSQRSRSVSGA--STG 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264 AKRITIAQIRQHRWM-----QADPTLLQQDDPAFDMQGYTSNLGDYNEQVLGIMQALGI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91 PHYLKLHDYYENKKYLYLVLEHYSGGELFDYLYKKGRLTPKEARKFFRQIVSALDFCHSY 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24 VGFYDVERTLGKGNFAVVKLARHRVTKTQVAIKIIDKTRLDSSNLEKIYREVQLMKLLNH 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEH 90
                                                                                                                                                                                                                                                                                                                                   511 LPFSASEGPAGLGSGLATPGLLGTSSPVRLASPFLGS-----QSATPVLQTQAGLGTAV 564
686 VPYVLAP 692
                                       741 -PRSLQP 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSN-GELDPDVLESMASLGCF 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEP 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PNIIKLYQVMETKDMLYIVTEFAKNGEMFDYLTSNGHLSENEARQKFWQILSAVEYCHNH 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLSR 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QLDVWSLGVVLYVLVCGSLPFDGPNLPTLRQRVLEGRFRIPFFMSQDCETLIRRMLVVDP
                                                                                                                                                                                                      DIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGS 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LSSS-----PLSSPRSPVF---SFSP----EPGAGDEARGGGSPTSKTQTLPSRGPRGG 486
                                                                                                                                                                                                                                                                                         SP-----ELAKRSWFGNFISLDKEEQIFLYLKDKPLSSIKA 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGEQPPPPSARSTPLPGPPGSPRSSGGTPLH-SPLHTP----RASPTGTP--GTTP--- 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -DRQRTIESLQNSSYNHFAAIYYLLLERLKEHRSAQ------PSSRPTPAP---- 361
                                                                                                                                                                                                                                                  LPPVSFQEGRRASDTSLTQGLKAFRQQLRKNARTKGFLGLNK-----
                                                                                                                                                                                                                                                                                                                                                                        -----PPSPGGGVG--GAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPES
                                                                                                                                                                                                                                                                                                                                                                                                                  -----QEPLPGSTGRRHTLAEVSTHFSPLNPPCIIVSSSATASPSEGTSSDSC 510
                                                                              --SGLQGCTTS----NREGRSLLEEVLHQQRLLQLQHHSSTAAAS---SGCQQGPQLSP
                                                                                                                        GGGGIYSVTFTLISGPSRRFKRVVETI--QAQLLSTHDQPSVQALADEKNGAQTRPAGAP 740
                                                                                                                                                                 -----IKGLARQV-CQSSVRT---PRGGMSTFHTPA------PS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149
779 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative 112; Mismatches 251; Indels 189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           85027 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 770.5; DB 1 Pred. No. 3.7e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATP (BY SIMILARITY). ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7B08131BC46D9C4E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1; Length 779;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             263
                                                                                                                                                                                                                                                         606
```

```
GIN4_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 8
밁
                               Ş
                                                                    Ъ
                                                                                                   Q
                                                                                                                                                        Query Match
Best Local :
                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Serine/threonine-protein kinase GIN4 (EC 2.7.1.-).
GIN4 OR YDR507C OR D9719.13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dietrich F.S., Mulligan J., Allen E., Araujo R., Aviles E., Berno, Carpenter J., Chen E., Cherry J.M., Chung E., Duncan M., Hunicke-Smith S., Hyman R., Komp C., Lashkari D., Lew H., Lin D., Mosedale D., Nakahara K., Namath A., Oefner P., Oh C., Petel F.X., Roberts D., Schramm S., Schroeder M., Shogren T., Shroff N., Rinarth A., Yelton M., Botstein D., Davis R.W.; Submitted (AUG-1955) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q12263;
01-NOV-1997 (Rel. 35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GIN4_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1997 (Rel. 35, Last sequence update) 30-MAY-2000 (Rel. 39, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Longtine M.S., Fares H., Pringle J.R.;
"Role of the yeast Gin4p protein kinase in septin assembly and the relationship between septin assembly and septin function.";
J. Cell Biol. 143:719-736(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=99030835; PubMed=9813093;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saccharomycetales; Saccharomycetaceae; Saccharomyces
                                                                                                                                                                                                                            BINDING
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSSP; Q63450; 1A06.
SGD; S0002915; GIN4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U33140; AAA75513.1; -. EMBL; U33057; AAB64949.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transferase; Serine/threonine-protein kinase; ATP-binding.
                                                                                                                                                                                                                                                                                                                                                                   SMART; SM00220; S_TKC;
                                                                                                                                                                                                                                                                                                                                                                                 ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00069;
                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkinase.
                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                               NP_BIND
                                                                                                     31 VGPYRLEKTLGKGOTGLVKLGVHCITGQKVAIKIVNREKLS------ESVL 75
76 YGIEREIIIMKLLNHPNVLRLYDVWETNTDLYLVLEYAEKGELFNLLVERGPLPEHEAIR 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIM1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES
                                 MKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARK 135
                                                                    IGPWKLGETLGLGSTGKVQLARNGSTGQEAAVKVISKAVFNTGNVSGTSIVGSTTPDALP 75
                                                                                                                                        184;
                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                   PD000001; Euk_pkinase; 1.
                                                                                                                                                                                                            156 1:
1142 AA;
                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                      pkinase;
                                                                                                                                                                                                                            156
                                                                                                                                                                                                                                                               289
33
                                                                                                                                                        18.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                               129857 MW;
                                                                                                                                           77; Mismatches 139; Indels 81; Gaps
                                                                                                                                                                                                                            PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY
                                                                                                                                                        Score 760.5; DB 1
Pred. No. 1.3e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                               EC16FF4BB49DD811 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1142 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Araujo R., Aviles E., Berno A.,
                                                                                                                                                                            DB 1;
                                                                                                                                                                           Length 1142;
                                                                                                                                               13;
```

Ş

136 FFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPH 195

```
RA Skelton J., Simmonds M., Squares R., Squares S., Stevens K.,
RA Taylor K., Taylor R.G., Tivey A., Walsh S.V., Warren T., Whitehead S.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Weltjens I., Vanstreels E., Rleger M., Schaefer M., Mueller-Auer S.,
RA Gabel C., Fuchs M., Fritzc C., Holzer E., Moestl D., Hilbert H.,
RA Gabel C., Fuchs M., Fritzc C., Holzer E., Moestl D., Hilbert H.,
RA Gary M. K., Langer I., Beck A., Lehrach H., Reinhardt R., Pohl T.M.,
RA Eger P., Zimmermann W., Wedler H., Wambutt R., Purnelle B.,
RA Goffeau A., Cadieu E., Dreano S., Gloux S., Lelaure V., Mottler S.,
RA Gailbert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Lucas M., Rochet M., Gaillardin C., Tallada V.A., Garzon A., Thode G.,
RA Daga R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Dominguez A., Revuelta J.L., Moreno S., Armstrong J., Forsburg S.L.,
RA Cerrutti L., Lowe T., McComble W.R., Paulsen I., Potashkin J.,
RA Shpakovski G.V., Ussery D., Barrell B.G., Nurse P.,
RT "The genome sequence of Schizosaccharomyces pombe.";
RIL Nature 415:871-880(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wood V., Gwilliam R., Rajandream M.A., Lyne M., Lyne R., Stewart A., Sgouros J., Peat N., Hayles J., Baker S., Basham D., Bowman S., Brown D., Brown S., Chillingworth T., Churcher C.M., Collins M., Connor R., Cronin A., Davis P., Feltwell T., Fraser A., Gentles S., Goble A., Hamlin N., Harris D., Hidalgo J., Hodgson G., Holroyd S., Hornsby T., Howarth S., Huckle E.J., Hunt S., Jagels K., James K., Jones L., Jones M., Leather S., McDonald S., McLean J., Money P., Moule S., Mungall K., Murphy L., Niblett D., Odell C., Money R., O'Neil S., Pearson D., Quall M.A., Rabbinowitsch E., Rutherford K., Rutter S., Saunders D., Quall M.A., Rabbinowitsch E., Rutherford K., Rutter S., Saunders D., Granner S., Sharp S., Charles B., Charles B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       074536;
15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
SNF1-like protein kinase (EC 2.7.1.-).
-1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
Schizosaccharomycetales; Schizosaccharomycetaceae;
Schizosaccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=21848401; PubMed=11859360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             465 S 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          413 S-----RKKPISFNKFTASSASSSNLTTPGSSKRLSKNFSSKKKLSTIVNQSSPTPA 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408 AGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSPLSSPRSP-----VFSFSPEPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           461 A 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----CDTQKELIKQQQVKKRQSISSVSVSPSKKV-----STTPQRRRNRESL--ISVTS 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ERYPSCE-----DQDLPPRNDVD----PPRKRVDSPMLSRHGKRRPERKSMEVLSITD 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PREDTYLTPLSESNSSIDATILQNLVILWHGRDPEGIKEKLREPGANAEKTLYALLYRFK 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-----SNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRK 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEISREAQDLIRKILTVDPERRIKTRDILKH---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRR---VAMRSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YAAPEIVSGIPYQGFASDVWSCGVILFALLTGRLPFDEEDGNIRTLLLKVQKGEFEMPSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFD--DDNLRQLLEKVKRGVFHMP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       576 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----PLLQKYPSIRDSKSIRGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195
```

```
DЬ
DIT
                                                                                                                                                                               RESULT 10
SNF1_YEAST
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SO STATE OF THE ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                     SNF1_YEAST
P06782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BINDING
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00108; PROTEIN_KINASE_ST; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

Transferase; Serine/threonine-protein kinase; ATP-binding.
DOMAIN 34 285 PROTEIN KINASE.
                                                                                                                                                                                                                                                                                              417 VPTAEKNKLEM-----RTLADAASAVDTSQSTRKKS
                                                                                                                                                                                                                                                                                                                                                         414 -PVPTRRALEMAQHSQRSRSVSGASTGLSSSPLSSPRS 450
                                                                                                                                                                                                                                                                                                                                                                                                                357 SKRVDSFLSVSPPAFSEYTSELQKKSKQELIDPTLEGPRWTVSDPPTYAKQTIDSNICVL 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           379 RKRVDS-----PMLSRHGKRRPERKSMEVLSITDAGGGGS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00069; pkinase; 1.
ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00220; S_TKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         315 -----AMGFSED--YIVEALRSDENNEVKEAYNLL------HENQVIQEKSHLS-K 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319 VLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            261 LLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPC--LEPAPGRRVAMRSLPSNGELDPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201 VIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AL031543; CAA20833.1; -. HSSP; Q63450; 1A06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24 PPQ--HAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVL-MKVER 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 PPEAISKRHIGPYIIRETLGEGSFGKVKLATHYKTQQKVALKFISRQLLKKSDMHMRVER 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EIAILKLIEHPHYLKLHDYYENKKYLYLVLEHVSGGELFDYLYKKGRLTPKEARKFFRQI 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIRRMIVADPMQRITIQEIRRDPWF---NVNLPDYLRPMEEVQGSYADSRIVSKLGE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VINGKLYAGPEVDVWSCGIVLYVMLVGRLPFDDEFIPNLFKKVNSCVYVMPDFLSPGAQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ICAIEYCHRHKIVHRDLKPENLLLDDNLNVKIADFGLSNIMTDGNFLKTSCGSPNYAAPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EISYLKLLRHPHIIKLYDVITTPTDIVMVIEY-AGGELFDYIVEKKRMTEDEGRRFFQQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SNF1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IPR000719; Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156
576 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48 AT
63 AT
156 BY
65996 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 757.5; DB 1; Length 576;
Pred. No. 9.1e-24;
95; Mismatches 133; Indels 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY SIMILARITY).

BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E5857E8F171E7B50 CRC64;
                                                                                                                                               633
                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12;
```

01-JAN-1988 (Rel. 06, 01-JAN-1988 (Rel. 06, 15-JUL-1999 (Rel. 38,

catabolite

derepressing protein kinase (EC 2.7.1.-).

Last sequence update)
Last annotation update)

Created)

SNF1 OR CAT1 OR CCR1 OR PAS14 OR GLC2 OR YDR477W OR D8035.20

7.

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Celenza J.L., Carlson M.;
"A yeast gene that is esential for release from glucose repression encodes a protein kinase.";
Science 233:1175-1180(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dietrich F.S., Mulligan J., Allen E., Araujo R., Aviles E., Berno A., Carpenter J., Chen E., Cherry J.M., Chung E., Dunci Hunicke-Smith S., Hyman R., Komp C., Lashkari D., Lew H., Lil Mosedale D., Nakahara K., Namath A., Oefner P., Oh C., Petel Roberts D., Schramm S., Schroeder M., Shogren T., Shroff N., Winant A., Yelton M., Botstein D., Davis R.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-86289463; PubMed-3526554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID-4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-94131988; PubMed-7905477; Mitchelhill K.I., Stapleton D., G
                                                                                                                                                                                                                                                                                                                                                                                                                                               entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Mammalian AMP-activated protein kinase shares structural and functional homology with the catalytic domain of yeast Snf1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Katsis F., Witters L.A., Kemp B.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 274-284; 528-539 AND 622-630, AND PHOSPHORYLATION SITE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (AUG-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                     ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00220; S_TKC; 1.
                                                                                                                                                                                                                                                                                                                                                                               PIR; A26030; A26030.
                                                                                                                                                                                                                                                                                                                                                                                              EMBL; M13971; AAA35058.1; -. EMBL; U33050; AAB64904.1; -.
                                                 SEQUENCE
                                                                                                     BINDING
                                                                                                                                                                                                                        PROSITE;
                                                                                                                                                                                                                                                                                                          Interpro; IPR000719; Euk_pkinase.
Interpro; IPR002290; Ser_thr_pkinase.
                                                                                                                                                                     Phosphorylation;
                                                                                                                                                                                                                                                                                           Pfam; PF00069; pkinase;
                                                                                                                    NP_BIND
                                                                                                                                      NIAMOC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHOSPHORYLATES CAT8.
SUBCELLULAR LOCATION: ASSOCIATED WITH THE NUCLEAR MEMBRANE.
SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION: ESSENTIAL FOR RELEASE FROM GLUCOSE REPRESSION. IT INTERACTS AND HAS FUNCTIONAL RELATIONSHIP TO THE REGULATORY PROTEIN SNP4. INTERACTS ALSO WITH SIP1, SIP2 AND GALB3. COULD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SNF1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                            ; P24941; 1HCL.
S0002885; SNF1.
                                                                                                                                                                                                        PS50011;
                                                                                                                                                                                                                          PS00108;
                                                 633 AA;
                                                                                                                                                                UUIL; PROTEIN_KINASE_DOM; 1.
Serine/threonine-protein kinase; ATP-binding;
ion; Carbohydrate metabolism; Nuclear protein.
ion; Carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             269:2361-2364(1994).
                                                                                                                                                                                                        PROTEIN_KINASE_ATP; 1.
PROTEIN_KINASE_ST; 1.
PROTEIN_KINASE_DOM; 1.
                                                                                     69
84
177
18.3%;
                                                    ĭ
Score 753.5; DB 1;
Pred. No. 1.4e-23;
                                                                                       BY SIMILARITY
                                                                                                    ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                     PHOSPHORYLATION (AUTO-)
                                                                                                                                        PROTEIN KINASE
                                                                                                                                                        POLY-HIS
                                                    F5C63565C986C4E3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gao G., House C., Michell
                                                    CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ng E., Duncan M.
Lew H., Lin D.,
                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Petel F.X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Duncan M.,
                     633;
```

Matches 166;

Similarity

Conservative

103;

Mismatches

144;

Indels

93;

Gaps

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뮻
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SNF1_CANTR
                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or:send an email to license@isb-sib.ch).
                                                                                                                                                                                                                    SNF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-JUL-1999 (Rel. 15-JUL-1999 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 094168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SNF1_CANTR
                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; mitosporic Saccharomycetales; Candida.
                                                                                                                                                                                                                                                                                                                                                                                                                   Candida tropicalis (Yeast)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Carbon catabolite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175 FGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136 GNELFDYIVQRDKMSEQEARRFFQQIISAVEYCHRHKIVHRDLKPENLLLDEHLNVKIAD
                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       292 -PDPCLEPAPGRRVAMR-----SLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256 SIPVLFKNISNGVYTLPKFLSPGAAGLIKRMLIVNPLNRISIHEIMQDDWFKVDLPEYLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235 NLRQLLEKYKRGVFHMPHFTPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                471 PTSLPQIHRANMLAQGSPAASKISPL 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56 TGQKVAIKIVNREKLSESVLM-KVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14 AYHLPHPHPHPPQHAQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SHHHHHHHHHHHHGHGGSNSTLNNPKSSLADGAHIGNYQIVKTLGEGSFGKVKLAYHTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGQKVALKIINKKVLAKSDMQGRIEREISYLRLLRHPHIIKLYDVIKSKDEIIMVIEY-A 135
                                                                                                                                                                            SNF1 SUBFAMILY.
                                                                                                                                                                                           SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES
                                                                                                                                                                                                          SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QVDHETAKQHARRM-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----NQEKMIYYLLLDRKERYPSCEDQDLPPRNDV------DPP------RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PPD--LKPHPEEENENNDSKKDGSSPDNDEIDDNLVNILSSTMGY-EKDEIYESLESSED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FGLSNIMTDGNFLKTSCGSPNYAAPEVISGKLYAGPEVDVWSCGVILYVMLCRRLPFDDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STGL-----SSSPLSSPRSPV 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALE----MAQHSQRSRSVSGA 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TPAFNEIRDAYMLIKENKSLI-----KDMKANKSVSDELDTFLSQSPPTFQQQSKSHQKS
AB024535; BAA75889.1; -. Q63450; 1A06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 derepressing protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38, Created)38, Last sequence update)38, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----ASAITQQRTYHQSPFMDQYKEEDSTVSIL 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----YVGPYRLEKTLGKGQTGLVKLGVHCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                      (EC 2.7.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                            AAKI_HUMAN STANDARD; PRT; 550 AA.
(2)3131; 000286; Q9UNQ4;
15-JUL-1998 (Rel. 36, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
5'-AMP-activated protein kinase, catalytic alpha-1 chain (EC 2.7.1.-)
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases [2]
                          alpha-1.
                                                                                                                         Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                         CHE
                                                                  TISSUE=Mammary gland;
                                                                                                               NCBI_TaxID=9606;
                                                                                                                                                        Homo sapiens (Human).
                                                                                                                                                                        PRKAA1 OR AMPK1.
                                                                                                                                                                                                                                                                                             HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Prodom; PD000001; Euk_pkinase; 1.
SMART; SM00220; S_TKC; 1.
PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
                                Nucleotide sequence of cDNA for human AMP-activated protein kinase
                                                                                    EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                             373 VLDAYLLM--KENHTLVKDLKKSKSENIESFLSLSPPPSSSFPNP 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Phosphorylation; Carbohydrate metabolism; Nuclear protein pomain 17 29 POLY-HIS.
                                                                                                                                                                                                                                                                                                                                                                          348 KMIYYLLLDRKERYPSCEDQDLPPRNDVD-----PPRKRVDSP 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                302 RRVAMRSLPSNGELDPDVLESMA-SLGCFRDR-----ERLHRE-----LRSEEENQE 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242 KVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             260 KISNGYYTLPNYLSPGAKHLLTRMLYVNPLNRITIHEIMEDEWF--KQDMPDYLLPPD--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200 TDGNFLKTSCGSPNYAAPEVISGKLYAGPEVDVWSSGVILYVMLCGRLPFDDEFIPALFK 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182 VGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122 LVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRTADFGMASLQ 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                    ---LSKIKTSKIDIDEDVISALSVTMGYDRDEIISVIEKANREAAAGGATPTNQSKSTNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IVQRGKMPEDEARRFFQQIIAAVEYCHRHKIVHRDLKPENLLLDDQLNVKIADFGLSNIM 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KIINRKTLAKSDMQGRVEREISYLRLLRHPHIIKLYDVIKSKDEIIMVIE-FAGKELFDY 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KIVNREKLSESVLM-KVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDY 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HHHHHHHHSQQPAQPIPIDPNVNPANRIGRYQIIKTLGEGSFGKVKLAQHVGTGQKVAL 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YHLPHPHPHPPQHAQ------YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAI 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ?00069; pkinase; 1.
PD000001; Euk_pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR000719; Euk_pkinase.
IPR002290; Ser_thr_pkin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  303 P
66 A
81 A
174 B
207 P
70323 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ser_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       thr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90; Mismatches 118; Indels
                                                                                                                        Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 730; DB 1; Length 619; Pred. No. 1.2e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHOSPHORYLATION (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OFCF1FC3DCE706D7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTO-) (BY SIMILARITY).
CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10;
```

```
"Mammalian AMP-activated protein kinase subfamily.";

J. Biol. Chem. 271:611-614(1996).

-I- FUNCTION: RESPONSIBLE FOR THE REGULATION OF FATTY ACID SYNTHESIS BY PHOSPHORYLATION OF ACETYL-COA CARBOXYLASE. IT ALSO REGULATES CHOLESTEROL SYNTHESIS VIA PHOSPHORYLATION AND INACTIVATION OF HORNONE-SENSITYE LIPASE AND HYDROXYMETHYLGLUTARYL-COA REDUCTASE. APPEARS TO ACT AS A METABOLIC STRESS-SENSING PROFEIN KINASE SWITCHING OFF BIOSYNTHETIC PATHWAYS WHEN CELLULAR ATP LEVELS ARE DEPLETED AND WHEN 5'-AMP RISES IN RESPONSE TO FUEL LIMITATION AND/OR HYPOXIA. THIS IS A CATALYTIC SUBUNIT (BY SIMILARITY).

-I- SUBUNIT: HETEROTRIMER OF A CATALYTIC SUBUNIT, A BETA AND A GAMMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Stapleton D., Mitchelhill K.I., Gao G., Widmer J., Michell B.J., Teh T., House C.M., Fernandez C.S., Cox T., Witters L.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96132781; PubMed=8557660;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 294-550 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Intestine;
Taboada E.N., Hickey D.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300 previously undefined genes expressed in CD34+ hematopoietic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=20499367; PubMed=11042152; Zhang Q.-H., Ye M., Wu X.-Y., Ren S.-X., Zhao M., Zhao C.-J., Fu G., Zhang Q.-H., Ye M., Wu X.-Y., Ren S.-X., Enao M., Zhao C.-J., Fu G., Zhang J.-W., Tao J., Huang Q.-H., Zhou J., Hu G.-X., Gu J., Chen S.-J., Chen Z.; "Cloning and functional analysis of cDNAs with open reading frames for a company of the company o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (APR-1995) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 27-200 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genome Res. 10:1546-1560(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      stem/progenitor cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Blood
                                 SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES
                                                                                                                      PTM: AUTOPHOSPHORYLATED (BY SIMILARITY).
SNF1 SUBFAMILY.
                                                                                                                                                                                                                                   NON-CATALYTIC SUBUNITS
```

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).

```
SOLE TELEVISION OF THE PROPERTY OF THE PROPERT
                                                                           CONFLICT
                                                                                                                                                                        NP_BIND
                                                                                                                                                                                                                                                                                                         Pfam; PF00069; pKildse; 1.

ProDom; PD000001; Euk pkinase; 1.

SMART; SM00220; S_TKC; 1.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00107: PROTEIN_KINASE_ST; 1.
          SEQUENCE
                                   CONFLICT
                                                       CONFLICT
                                                                                                                             MOD_RES
                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                          hosphorylation; ATP-binding
                                                                                                                                                                                                                                                                        Transferase;
                                                                                                                                                                                                                                                                                                 PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  senew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; Q63450; 1A06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         602739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AB022017; BAA36547.1; -. AF100763; AAD43027.1; -. U22456; AAA64850.1; -. Y12856; CAA73361.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGNC:9376; PRKAA1.
                                                                                                                                                                                                                                                                                       PS00108; PROTEIN_KINASE_ST; PS50011; PROTEIN_KINASE_DOM;
                                                       141
174
28
193
199
                           260
                                                                                                                                                                                                                                                      Serine/threonine-protein kinase; Fatty acid biosynthesis;
                                                       47
141
174
174
193
     ¥;
               PHOSPHORYLATION (AUTO-) (POTENTIAL).
T -> A (IN REF. 3).
A -> V (IN REF. 3).
I -> L (IN REF. 3).
S -> T (IN REF. 2).
                                                                                                                                                              ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                       BY SIMILARITY
                                                                                                                                                                                                                   PROTEIN KINASE
3316183D744DE325 CRC64;
```

```
AAKILT 13
AAKILT AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
AAKILT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAK1_RAT STANDARD; PRT; 548 AA.
p54645;
01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
5'-AMP-activated protein kinase, catalytic alpha-1 chain (EC 2.7.1.-)
                          Stapleton D., Gao G., Michell B.J., Widmer J., Mitchelhill K.,

Teh T., House C.M., Witters L.A., Kemp B.E.;

"Mammalian 5'-AMP-activated protein kinase non-catalytic subunits are
homologs of proteins that interact with yeast Snf1 protein kinase.";

J. Biol. Chem. 269:29343-29346(1994).

J. BIOL. Chem. 269:29343-29346(1994).

J. FUNCTION: RESPONSIBLE FOR THE REGULATION OF FATTY ACID SYNTHESIS

BY PHOSPHORYLATION OF ACETYL-COA CARBOXYLASE. IT ALSO REGULATES

CHOLESTEROL SYNTHESIS VIA PHOSPHORYLATION AND INACTIVATION OF
HORMONE-SENSITIVE LIPASE AND HYDROXYMETHYLGLUTARYL-COA REDUCTASE.

APPEARS TO ACT AS A METABOLIC STRESS-SENSING PROTEIN KINASE

APPEARS TO ACT AS A METABOLIC STRESS-SENSING PROTEIN KINASE

SWITCHING OFF BIOSYNTHETIC PATHWAYS WHEN CELLULAR ATP LEVELS ARE

SWITCHING OFF BIOSYNTHETIC PATHWAYS WHEN CELLULAR ATP LEVELS ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-Sprague-Dawley; TISSUE-Liver, and Hypothalamus; MEDLINE-96132781; PubMed-8557660; Stapleton D., Mitchelhill K.I., Gao G., Widmer J., Mic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRKAA1 OR AMPK1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AMPK alpha-1 chain).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     346
                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=95050763;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-Sprague-Dawley; TISSUE-Liver, and Hypothalamus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PARTIAL SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kemp B.E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mammalian AMP-activated protein kinase subfamily.", Biol. Chem. 271:611-614(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKL-SESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TSPPDSFLDDHHLTRPHPERVP 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
   DEPLETED AND WHEN 5'-AMP RISES IN RESPONSE TO FUEL LIMITATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VDPPRKRVDSPMLSR-HGKRRP 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RDRERLHRELRSEEENQEKMI-------YYLLLDRKERYPSCEDQDLPPRND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PMKRASIKDIREHEWF - - - KQDLPKYLFPE - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCF 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEVDIWSSGVILYALLCGTLPFDDDHVPTLFKKICDGIFYTPQYLNPSVISLLKHMLQVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HMVVHRDLKPENVLLDAHMNAKIADFGLSNMMSDGEFLRTSCGSPNYAAPEVISGRLYAG 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YSICHRDLKPENLLLDEKNNIRTADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HPHIIKLYQVISTPSDIFMVMEYVSGGELFDYICKNGRLDEKESRRLFQQILSGVDYCHR 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -DDEALKEVCEKFECSEEEVLSCLYNRNHQDPLAVAYHLIIDNRRIMNEAKDFYLA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    House C.M., Fernandez C.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=7961907;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17.6%; Score 725; DB 1; Length 550; 40.3%; Pred. No. 1.7e-22; tive 67; Mismatches 115; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gao G., Widmer J., Michell B.J., S., Cox T., Witters L.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
```

. .

RESULT 14 KCC4\_YEAST

KCC4\_YEAST STANDARD; P25389; P87005; O1-MAY-1992 (Rel. 22, Created)

PRT;

915

B

```
S
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                           Š
밁
                            Š
                                                             밁
                                                                                         Š
                                                                                                                         В
                                                                                                                                                       Ş
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Phosphorylation: #
DOMAIN 16
NP_BIND 22
BINDING 45
ACT_SITE 139
MOD_RES 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACT_SITE
MOD_RES
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commentities requires a license agreement (See http://www.ish-ric...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON-CATALYTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOW; 1.
Transferase; Serine/threonine-protein kinase; Phosphorylation; ATP-binding; Multigene family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND/OR HYPOXIA. THIS IS A CATALYTIC SUBUNIT.
-I- SUBUNIT: HETEROTRIMER OF A CATALYTIC SUBUNIT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProDom; PD000001; Euk_pkinase;
SMART; SM00220; S_TKc; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U40819; AAC52355.1; -. HSSP; Q63450; 1A06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00069; pkinase;
344
                                                                                                                          253
                                                                                                                                                                                        193
                                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                   150
                                                               289
                                                                                                                                                                                                                                                                                                                   73
                                                                                                                                                                                                                                                                                                                                                                                                       31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKL-SESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                               90 HPHYLKLHDYYENKKYLYLYLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                13 IGHYILGDTLGVGTFGKVKVGKHELTGHKVAVKILNRQKIRSLDVVGKIRREIQNLKLFR 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SNF1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND BRAIN
TSPPDSFLDDHHLTRPHPERVP
                             VDPPRKRVDSPMLSR-HGKRRP 395
                                                                                                                         PMKRATIKDIREHEWF --- KQDLPKYLFPE ----
                                                                                                                                                                                        PEVDIWSSGVILYALLCGTLPFDDDHVPTLFKKICDGIFYTPQYLNPSVISLLKHMLQVD
                                                                                                                                                                                                                      RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE
                                                                                                                                                                                                                                                     HMVVHRDLKPENVLLDAHMNAKIADFGLSNMMSDGEFLRTSCGSPNYAAPEVISGRLYAG
                                                                                                                                                                                                                                                                                 YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                                                                                                                                                                                               HPHIIKLYQVISTPSDIFMVMEYVSGGELFDYICKNGRLDEKESRRLFQQILSGVDYCHR 132
                                                                                           RDRERLHRELRSEEENQEKMI-------YYLLLDRKERYPSCEDQDLPPRND
                                                                                                                                                       PEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRYAMRSLPSNGELDPDVLESMASLGCF
                                                               -DDEALKEVCEKFECSEEEVLSCLYNRNHQDPLAVAYHLIIDNRRIMNEAKDFYLA----
                                                                                                                                                                                                                                                                                                                                                                                                                                               153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPECIFICITY: LOW EXPRESSION IN KIDNEY, LIVER, LUNG, HEART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           548 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBUNITS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           268
30
45
139
172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62599
                                                                                                                                                                                                                                                                                                                                                                                                                                                           17.6%; Score 722;
40.1%; Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W.
                                                                                                                                                                                                                                                                                                                                                                                                                                               68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY SIMILARITY).

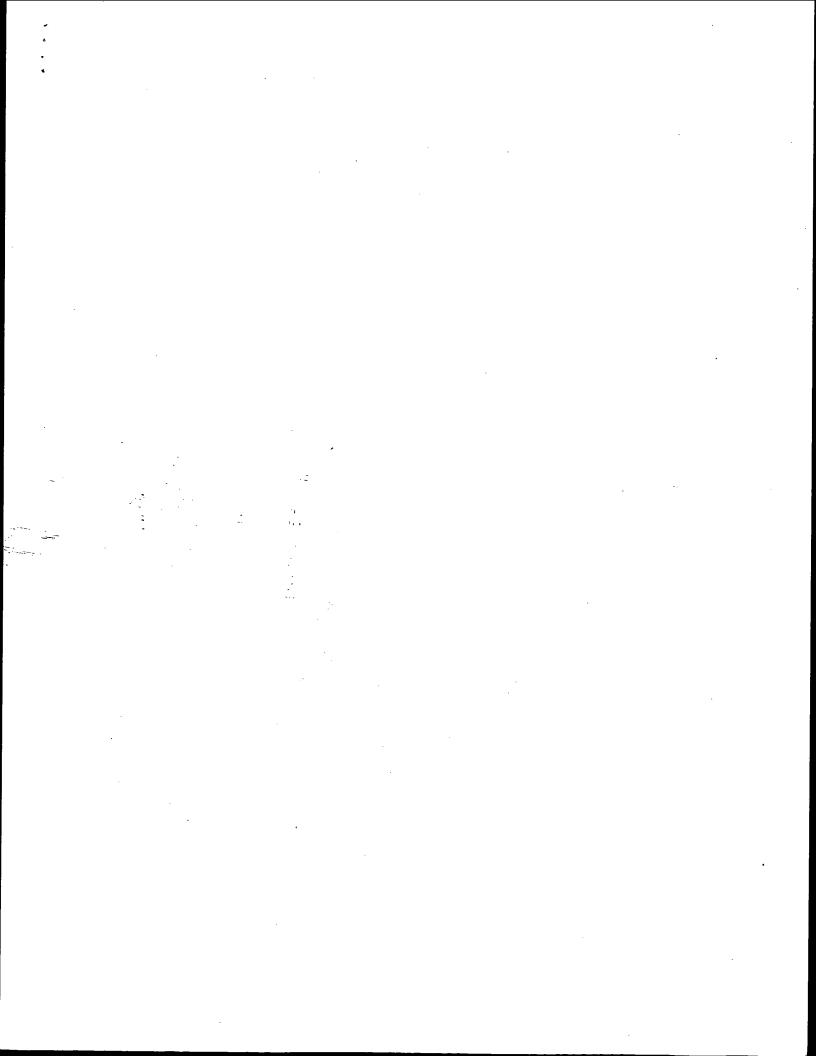
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PHOSPHORYLATION (AUTO-) (
5CCA3281C195F867 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches 115; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tamily.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
.2e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fatty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 548;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A BETA AND A GAMMA
                                                                                                                              DPSYSSTMI----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acid biosynthesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                       192
                                                                                                                                                                                                                                                                                     209
                                                                                              374
                                                                                                                                                            329
                                                                                                                                                                                           252
                                                                                                                                                                                                                         269
                                                                                                                            288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ē
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               way
                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
```

```
õ
                                                                                       밁
                                                                                                                                        Š
                                                                                                                                                                                             밁
                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOF THE WORK REPRESENTATION OF THE PROPERTY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the EUropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial and the statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypothetical protein; Transferase; Serine/threonine-protein kinase; ATP-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS: PRO0109; TYRKINASE.
ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00220; S_TKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Saccharomyces cerevisiae (Baker's yeast).

Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS50011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002290; Ser_thr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
Pfam; PF00069; pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X59720; CAA42361.1; -. PIR; S19351; S19351.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce, or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schweitzer B., Spiegelberg R.; submitted (MAR-1992) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
Probable serine/threonine-protein kinase YCL2
HSSP; Q63450; 1A06.
SGD; S0000529; YCL024W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gromadka R.;
Submitted (JAN-1996) to
-!- SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (MAR-1992) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stateva L.I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oliver S.G., Anwar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 567-915 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Duesterhoeft A.,
Schweitzer B., S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 1-569 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YCL024W OR YCL24W.
                                                                                                                                                                                                                                82 IAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIV 141
                                                                                                                                                                                                                                                                                       18 IGPWKLGETLGFGSTGKVQLAQHERTGHRTAVKVISKSIFNNNGNHSNDDSVLPYNIERE
                                                                                                                                                                                                                                                                                                                                           31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLS-----ESVL-MKVERE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NIM1 SUBFAMILY.
                                                                                                                                                                                    IVIMKLLSHPNVLSLYDVWETNNNLYLILEYAEKGELFNLLVDHGPLPEREAINCFRQII
                                                                                                                                                                                                                                                                                                                                                                                                       171;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               915 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; S19351.
                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21
27
50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Erdmann D., Hegemann J., Philippsen P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       285
35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R., Brown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             102688
                                                                                                                                                                                                                                                                                                                                                                                                                             17.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the EMBL/GenBank/DDBJ databases.
TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W.
                                                                                                                                                                                                                                                                                                                                                                                                       80;
                                                                                                                                                                                                                                                                                                                                                                                                                             Score 722; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BFB01C8CA43AC181 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gent M.E., Indge K.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                             .5e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YCL24W (EC 2.7.1.-).
                                                                                                                                                                                                                                                                                                                                                                                               155; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         James C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                  40;
                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                              257
                                                                                                                                                                                    137
                                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                  11;
```

```
THE TERM OF A REPORT OF THE TERM OF THE TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    睩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACT_SITE
                                                                                                                                     Transferase; Serine/threonine-protein kinase; ATP-binding; Phosphorylation; Carbohydrate metabolism; Nuclear protein.
                                                                                                                                                                                             PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                             ProDom; PD000001; Euk_pkinase; 1. SMART; SM00220; S_TKC; 1.
                                                                                                                                                                                                                                                                                                                                                                   EMBL; L78130; AAB48642.1; -.
HSSP; P24941; 1HCL.
InterPro; IPR000719; Euk_pkinase
InterPro; IPR002290; Ser_thr_pkir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Candida glabrata (Yeast) (Torulopsis glabrata).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; saccharomycetales; mitosporic Saccharomycetales;
                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                           Pfam; PF00069; pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1997 (Rel.
01-NOV-1997 (Rel.
15-JUL-1999 (Rel.
                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carbon catabolite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=97101049; PubMed=8945576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=5478;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SNF1_CANGA
Q00372;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CANGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          430 -SRSVSGASTGLSSSPLSSPRSPVFS 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374 KNRNKIKKTKKNKRSSTLSSSSSLLLNNRSIQ-----STPRRRTSK--RHSRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY).
SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SNF1 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FSSSRKRSSFLLSSNPTDSSPIPLRS 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTSASIDDSILQNLVVLWHGRHADDIVSKLKENGTNKEKILYALLY--RFKLDSVRGSNK 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -SNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHE---PDPCLEPAPGRRVAMRSLP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VSGLPYEGFASDVWSCGVILFALLTGRLPFDEENGNVRDLLLKVQKGQFEMPNDTEISRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQR 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AQDLIGKILVVDPRQRIKIRDILSHP--LLKKYQTIKDSKSIKDLPRENTYLYPLADSNN 315
     39
45
68
161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35, Created)
35, Last sequals, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              derepressing protein
     290
53
68
161
                                                                                                                                                                                                                                                                                                                                                                      Ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
epressing protein kinase
PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                   POLY-HIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (EC 2.7.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      257
```

```
8
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                     밁
Search completed: April 16, 2003, 12:30:21 Job time : 34 secs
                                                                                                                                                       밁
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 17.5%; Score 720; DB 1; Length 611; Best Local Similarity 35.6%; Pred. No. 2.9e-22; Matches 148; Conservative 97; Mismatches 129; Indels 42; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOD_RES 194 194 PHOSPHORYLATION (AUTO-) (BY SIMILARITY). SEQUENCE • 611 AA; 70049 MW; 89E17812A4900CD0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                 361 YILIKDNKSLIKDMKQDNNVTQELDTFLSQSPPTFQQNGDGMKASEDQKKKHSGRR 416
                                                                                                                   351 YYLLLDRKERYPSCED-----QDL-----PPRNDVDPPRKRVDSPMLSRHGKRR 394
                                                                                                                                                     303 LKQQEQFNKKSGNEENVEEIDDEMVVTLSKTMG--YDKDEIYEALESSEDTPAYNEIRNA 360
                                                                                                                                                                                        301 GRRVAMRSLPSNG-----ELDPDVLESMA-SLGCFRDRERLHRELRSEEE----NQEKMI 350
                                                                                                                                                                                                                                 246 KNISNGYYTLPKFLSPGASDLIKRMLIVNPLNRISIHEIMQDEWF---KVDLAEYLVPQD 302
                                                                                                                                                                                                                                                     241 EKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
```



```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-003-690-2
4108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        April 16, 2003, 12:21:57; Search time 43 Seconds (without alignments) 2410.907 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MSSGAKEGGGGSPAYHLPHP......PRRGPPKDKKLLATNGTPLP 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A_Geneseq_101002:*
1: /SIDS2/gcgdata/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA191.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1986.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1988.DAT:*
                                                                                                                                                                         /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1992.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2001.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2002.DAT:*
                                                                        /SIDS2/gcgdata/geneseq/geneseqp-emb]
                                                                                                               /SIDS2/gcgdata/geneseg/genesegp-emb1/AA1999.DAT:
                                                                                                                                                /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1998.DAT:
                                           /AA2000.DAT:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

10	. 9	80	7	0	u	<b>f</b>	ω	N		Result	
840.5	851	862	1043	1341.5	1952	2767.5	2794	3956.5	3956.5	Score	
20.5	20.7	21.0	25.4	32.7	47.5	67.4	68.0	96.3	96.3	Query Match Length DB	
823	1369	1349	204	301	851	664	674	794	794	ength	
21	23	22	22	22	22	23	23	23	22	DB	
AAW90879	AAE21712	AAG70854	ABB11680	ABB11052	ABB62061	AAE21723	AAM47830	AAE16271	AAU03517	ID	
Human keratinocyte	Human PKIN-7 prote	C albicans apoptos	Human Ser/Thr kina	Human HrPOPK-1 hom	Drosophila melanog	Human PKIN-18 prot	Human protein kina	Human kinase PKIN-	Human protein kina	Description	

44	43	42	41	40	39	38	37	36	ų, S	34	ü	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
761.5 761.5	7625	62	763.5	764	766.5	767	776	786	786	789	789	792	795	795	795	801	803.5	806.5	806.5	816	820	822	823	823	823	823	824.5	826	828	828	K)	831.5	(L)
18.5 18.5	18.6	•		•	18.7	18.7	18.9	19.1	19.1	19.2	19.2	19.3	19.4	19.4	19.4	19.5	19.6	19.6	19.6	19.9	20.0	20.0	•	•	20.0	20.0	20.1	20.1	•	•	•	20.2	
512 512	832	832	779	739	511	1398	520	1102	515	926	514	744	782	729	729	724	660	795	795	786	722	804	752	752	752	688	790	1251	724	691	768	783	783
21 23	23	22	17	22	14	22	22	21	21	22	21	23	22	22	19	23	23	23	23	22	17	22	23	22	22	23	21	22	23	23	22	22	22
AAG36157 AAO17663	AAE19053	AAB68340	AAR98226	ABB63486	AAR40842	ABB60535	AAB65629	AAB43286	AAB03422	AAB65631	AAB03420	AAE19049	AAM47219	AAB65628	AAW37158	ABB04431	ABB04432	AAE16258	AAE19052	AAU03518	AAR98227	AAM79333	ABB04433	ААМ93956	AAE11782	ABB04434	AAW90878	AAB65626	AAE19051	AAE19050 .	AAM78349	AAB85786	AAG65764
	Drosophila sp. PAR	A human dishevelle	Rat neuronal prote	Drosophila melanog	SHPP. Yeast sp.	Drosophila melanog	Novel protein kina	Human ORFX ORF3050	Ω.	Novel protein kina	n putat				Twenty-fiv	Murine neuronal se	e neuro	kinase	PAR-1C F	n protein	Rat neuronal prote	protein	_	_	kinase (1	_	n keratino	-	PAR-1B	PAR-1B a	protein	kinase P	Human protein kina

## ALIGNMENTS

```
RESULT 1
AAU03517
ID AAU03517 standard; Protein; 794 AA.
XX
AC AAU03517;
XX
DT 12-SEP-2001 (first entry)
XX
DE Human protein kinase #17.
```

Human; protein kinase; PTK; STK; cancer; cardiovascular disease; metabolic disorder; immune related disease; neurological disorder; neurodegenerative disorder; inflammatory disorder; infectious disease; reproductive disorder.

S Homo sapiens.

PN WO200138503-A2

PD 31-MAY-2001.

PF 22-NOV-2000; 2000WO-US32085

PR 24-NOV-1999; 99US-0167482

PA (SUGE-) SUGEN INC.

Plowman GD, Whyte D, Manning G, Sudarsanam S, Martinez R; Flanagan P, Clary D;

DR WPI; 2001-343950/36. DR N-PSDB; AAS06717.

```
CC AAU03501-AAU03557 represent novel human protein kinases #1-57. The CC novel protein kinases have been identified as members of the tyrosine CC or serine/threonine kinase (PTK and STK) families. The polynucleotides CC encoding protein kinases and the polypeptides may be used in the CC prevention, diagnosis and treatment of diseases associated with CC inappropriate kinase expression. For example, they may be used to treat CC disease (e.g. atherosclerosis), metabolic disorders (e.g. diabetes), immune related diseases (e.g. rheumatoid arthritis), neurological CC disease (e.g. schizophrenia), neurodegenerative disorders (e.g. disease), inflammatory disorders (e.g. asthma), infectious CC disease (e.g. HIV) and reproductive disorders (e.g. asthma), infectious CC disease (e.g. HIV) and reproductive disorders (e.g. asthma) be CC used for gene therapy and as DNA probes in dispostic assays.

CC The protein kinase polypeptides may be used as antigens in the production of antibodies against the protein kinases and in assays to identify modulators of protein kinase expression and activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic acids encoding human kinase polypeptides, useful for preventing diagnosing and/or treating e.g. cancer, immune, cardiovascular and neuronal-associated diseases, and microbial infections -
  624
                                                                                         564
                                                                                                                                                                              504
                                                                                                                                                                                                                        488
                                                                                                                                                                                                                                                                    444
                                                                                                                                                                                                                                                                                                               428
                                                                                                                                                                                                                                                                                                                                                           384
                                                                                                                                                                                                                                                                                                                                                                                                       368
                                                                                                                                                                                                                                                                                                                                                                                                                                                   324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                        AGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPPSPGGGVGGA
                                                                                                                                                                                                                                                               QRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGG
                                                                                                                                                                                                                                                                                                                                                      GGGGSPAYHLPHPHPHPPQHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNR
                         IFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVREQVDI
                                                                                                            AWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWEGNFISLDKEEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLL
                                                                                                                                                                                                                                                                                                                                                                                                                                              SLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLL
TFLVLKDKPLSSTKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 Similarity
756; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Figure 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   433pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 3956.5; DB 22;
Pred. No. 2.2e-258;
1; Mismatches 9; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 794;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                607
                                                                                                                                                                            563
                                                                                                                                                                                                                        547
                                                                                                                                                                                                                                                                                                             487
                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                    503
                                                                                                                                                                                                                                                                                                                                                         443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
```

Ş

Ş

밁

Š 밁 Š 밁 Qy 밁

밁

Q 밁 δÃ B Q В Qγ В γ 밁 Š

683

New polypeptides, useful for diagnosing, treating or preventing disorders of growth and development, cardiovascular and lipid, a diseases such as cancer, comprise human kinase polypeptides

```
RESULT 2
AAE16271
ID AAE1
XX AAE16271
XX A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                        Kamkumar J, Griff
Baughn MR, He A,
LO TP, Khan F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-JUN-2000;
23-JUN-2000;
30-JUN-2000;
07-JUL-2000;
13-JUL-2000;
25-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; kinase; PKIN-17; cancer; leukaemia; adenocarcinoma; osteoporosis; immune disorder; atherosclerosis; Crohn's disease; Hodgkin's disease; Acquired Immune Deficiency Syndrome; AIDS; Addison's disease; anaemia; allergy; asthma; adult respiratory distress syndrome; multiple sclerosis autoimmune thyroiditis; bronchitis; diabetes mellitus; osteoarthritis; Good pasture's syndrome; Graves' disease; pancreatitis; psoriasis; rheumatoid arthritis; ulcerative colitis; cirrhosis; cushing's syndrome; hepatitis; hypothyroidism; cerebral palsy; cataract; angina pectoris; cardiovascular disease; hypertension; vasculitis; myocarditis; obesity; congestive heart failure; ischaemic heart disease; lung tumour; gout; fatty liver; Niemann-Pick's disease; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-JUN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200196547-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE16271 standard; Protein; 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Domain
                                                                                                                                     2002-090207/12.
DB; AAD26464.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSSEGPEPSPRRDGSGGGGIYSVTFTTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALAD
                                                                                                                                                                                                                    Khan
M, I
                                                                                                                                                                                                                                                                                                                                                          Lal
                                                                                                                                                                                                                                                                                                                                                                                                               INCYTE GENOMICS INC.
                                                                                                                                                                                                            P, Bandman O, Borowsky ML, Au-Young J, Tribouley CM, Walia NK, Yao MG, Lu DAM, Griffin JA, Kearney L, Burford N, Nguye He A, Thornton M, Hafalia A, Patterson C in F, Recipon SA, Azimzai Y, Policky JL, Elliott VS, Thangavelu K, Batra S, Ison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-212073P.
2000US-213467P.
2000US-215651P.
2000US-216605P.
2000US-218372P.
2000US-228056P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001WO-US19444.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PKIN-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers 50..301 /note= "Eukaryotic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51..292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein_kinase_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein_kinase_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein_kinase_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein kinase
                                                                                                                                                                                                                 AG, Lu DAM, Greenwald SR;
zrd N, Nguyen DB, Tang YT
Patterson C, Gururajan R
Policky JL, Ding L;
cra S, Ison CH;
                                                                                                                                                                                                                                                                                                                                                       Lu Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sclerosis;
```

1; Page 159-161; 197pp; English.

```
CC (Acquiréd Immune Deficiency Syndrome (AIDS), asthma, Addison's disease, CC atherosclerosis, anaemia, allergies, adult respiratory distress syndrome, CC autoimmune thyroiditis, gout, bronchitis, Crohn's disease, diabetes CC mellitus, multiple sclerosis, Good pasture's syndrome, Graves' disease, CC osteoarthritis, osteoporosis, pancreatitis, psoriasis, Reiter's syndrome, CC enhumatoid arthritis, Sjogren's syndrome, uveitis, ulcerative colitis, CC paresitic, fungal, viral, protozoal and heminthic infections) CC growth and development disorders (arteriosclerosis, cirrhosis, hepatitis, CC Cushing's syndrome, hypothyroidism, cerebral palsy, cataracts); cardio CC vascular disease (arteriovenous fistula, hypertension, vasculitis, CC aneurysms, congestive heart failure, angina pectoris, myocarditis, CC ischaemic heart disease, chronic bronchitis, lung tumours); lipid CC disorder (fatty liver, Fabry's disease, Niemann-pick's disease, CC ischaemic heart compound and in gene therapy. The present sequence is human PKIN-17 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  treating a disease or condition associated with decreased expression of PKIN and a composition comprising PKIN antagonist is useful for treating a disease or condition associated with overexpression of PKIN. The disease or condition associated with overexpression of PKIN. The disease include cancer (leukaemia, adenocarcinoma, lymphoma, melanoma, melanoma, accoma, teratocarcinoma, Hodgkin's disease) immune disorder mysloma, sarcoma, teratocarcinoma, Hodgkin's disease) immune disorder mysloma, sarcoma, teratocarcinoma, Hodgkin's disease)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            corresponding cDNAs. A composition containing PKIN agonist is useful for treating a disease or condition associated with decreased expression of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         relates to human kinase PKIN proteins and their
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for treating
```

Best Loc Matches Query Match Sequence Local Similarity 794 AA; Conservative 96.3%; 98.1%; Score 3956.5; DB 23; Length 794; Pred. No. 2.2e-258; ed. No. 2.2e-258; Mismatches 9; Indels <u>ت</u> Gaps 67

밁 Š 밁 Š 밁 Ş 밁 Š 204 188 144 128 84 89 29 GGGGSPAYHLPHPHPHPPQHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNR EKLSESVLMKVEREJAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGR 127 ETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGV ETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGV 247 LTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLL LTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLL 187 EKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGR 143 GGGGE-----EEEAEERGRHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNR 83 263 203

밁 Š 밁 õ 324 308 264 248 SLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQ FHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMR SLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQ FHMPHF IPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMR 367 323 307

밁 ş 384 368 DLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHS 443 427

밁 Ş 444 428 QRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGG QRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGG 503 487

Ş 밁 504 488 AGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVGGA AGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTTPGTTPPPPSPGGGVGGA 563

밁 Ş AWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQ 607 623

S 809 IFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDI 667

> Q 밁 SSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALAD 683 727

SSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALAD

δÃ 뮹 744 728 EKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKKLLATNGTPLP 778 

밁

AAM47830 RESULT

Ħ AAM47830 standard; Protein; 674 AA

19-FEB-2002 (first entry)

Human protein kinase 2246 SEQ ID NO 2.

gene therapy. anti-inflammatory; analgesic; cardiovascular; cancer; sarcoma; cellular proliferation disorder; cellular differentiation disorder; metastatic; haematopoletic disorder; leukaemia; immune disorder; inflammatory disorder; arthritis; autoimmune disease; diabetes mellitus; Human; protein kinase 2246; cytostatic; anti-inflammatory; analgesic; cardiovaso psoriasis; Crohn's disease; cardiovascular disease; virus; pain; immunomodulator; carcinoma;

Homo sapiens.

1;

WO200181588-A2

01-NOV-2001

25-APR-2001; 2001WO-US13784.

25-APR-2000; 2000US-199391P.

(MILL-) MILLENNIUM PHARM INC

Meyers

WPI; 2002-049281/06. N-PSDB; ABA02994, ABA02995.

cellular proliferation/differentiation New protein kinase nucleic acid and polypeptide molecules, designated 2246, useful for diagnosing, preventing or treating cancer or a cellular proliferation/differentiation disorders, e.g. carcinoma, sarcoma or leukaemias

Claim 4; Fig 1; 111pp; English.

The invention relates to the human protein kinase 2246 gene and the the isolated encoded polypeptide with cytostatic, immunomodulator, anti-inflammatory, analgesic and cardiovascular activity. The 2246 curleic acid and polypeptide are useful for diagnosing, preventing or treating a subject having cancer or a cellular proliferation and/or cdifferentiation disorder or at risk of developing cancer or a cellular proliferation and/or differentiation disorder. In particular, the cdisorder includes carcinoma, sarcoma, metastatic or haematopoietic disorders (e.g. leukaemlas) or cancers of the lung, breast, thyroid, head concervation and/or treatinary tract. The 2246 nucleic acid and complete are also useful for treating immune disorders, e.g. inflammatory (e.g. respiratory inflammation or arthritis), autoimmune cdisease (e.g. diabetes mellitus, psoriasis, Wegener's granulomatosis, crohn's disease or Grave's disease), for treating cardiovascular cdiseases, endothelial cell disorder, vital diseases or pain. The nucleic acid and polypeptide are also useful for evaluating the efficacy of a treatment of cancer or a cellular proliferation and/or differentiation and/or differentiation that of the total of the concervation of a cellular proliferation and/or differentiation and/or the present that of the 2246 protein kinase.

```
RESULT 4
AAE21723
ID AAE2
XX AAE2
AC AAE2
XX DT 16-J
XX Huma
XX Huma
KW acqu
KW astt
                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
Human; kinase; enzyme; PKIN-18 protein; immune system disorder; anaemia; acquired immune deficiency syndrome; thymic hypoplasia; Crohn's disease; asthma; neurological disorder; epilepsy; Charcot-Marie-Tooth disease;
                                                                             16-JUL-2002
                                                                                                                              AAE21723 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                            641
                                                                                                                                                                                                                                                                                                                                              469
                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                               401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 YLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MSSGAKEGGGGSPAYHLPHPHPHPPQHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKV
                                                                                                                                                                                            AAQHLS-----
                                                                                                                                                                                                                                        YPSCEDQDLPPRNDVDPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRA 420
                                                                                                                                                                                                                  SVQALADEKNGAQTRPAGAPPRSLQPPPGRP 751
                                                                                                                                                                                                                                                                                                                                                       GGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFI 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEMAQHSQRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -RKVQIRSLEDIDPDVLDSMHSLGCFRDRNKLLQDLLSEEENQEKMIYFLLLDRKER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQLL
                                                                                                                                                                                                                                                                                                                                          --SVGGVPWRARLNSIKNSFLGSPRFHRRKLQVPTPEEMSNLTPESSPELAKKSWFGNFI
                                                                                                                                                                                                                                                                                                                                                                                                            RGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                               IEMAQHGQRSRSISGASSGLSTSPLSSPR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YPSQEDEDLPPRNEIDPPRKRVDSPMLNRHGKRRPERKSMEVLSVTD---GGSPVPARRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GRRVAMRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QVGDSLLETSCGSPHYACPEVIRGEKYDGRKADVWSCGVILFALLVGALPFDDDNLRQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YLVKKGRLTPKEARKFFRQIISALDFCHSHSICHRDLKPENLLLDEKNNIRIADFGMASL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MTSTGKDGGA----
                                                   PKIN-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                            -----VTPHPSPRGSPLPTPKG------TPVHTPKESPAGTPNPTPPSSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        674 AA;
                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ------QHAQYVGPYRLEKTLGKGQTGLVKLGVHCVTCQKV 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68.0%;
73.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55;
                                                                                                                                                                                          EPPPPAP 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 2794;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; DB 23;
1.5e-180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 674;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                          586
                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                          526
                                                                                                                                                                                                                                                                                                                                                                                            468
                                                                                                                                                                                                                                                                                                                                                                                                                                             429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
```

```
Thoracai Y, B
                                                                                                                                                               New human kinases, useful for diagnosing, treating or preventing immune system disorders (e.g. Crohn's disease), neurological disorders (e.g. epilepsy), or cell proliferative disorders (e.g. cancers such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AIDS; seizures; cell proliferative disorder; cancer; adenocarcinoma; leukaemia; lymphoma; melanoma; myeloma; sarcoma; developmental disorder; Down's syndrome; gene therapy; protein therapy; cytostatic.
                                                                                                                                    Claim 73; Page 181-183; 218pp; English.
                                                                                                                                                                                                                                                                                                                                        29-SEP-2000;
06-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                    08-SEP-2000;
14-SEP-2000;
                                                                                                                                                                                                         WPI; 2002-329769/36
N-PSDB; AAD34315.
                                                                                                                                                                                                                                                                             Gururajan
                                                                                                                                                                                                                                                                                       Bandman
                                                                                                                                                                                                                                                                                                           (INCY-) INCYTE GENOMICS
                                                                                                                                                                                                                                                                                                                                                                                                            31-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                        leukemia or lymphoma)
                                                                                                                                                                                                                                                                                                                                                          22-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Domain
                                                                                                                                                                                                                                                                                      Ó
                                                                                                                                                                                                                                                                         ₽,
                                                                                                                                                                                                                                               Nguyen DB, Wa
R, Ding L, Pat
, Elliott VS,
Burrill JD, N
                                                                                                                                                                                                                                                                                                                             2000US-231357P.
2000US-232654P.
2000US-234902P.
2000US-23649P.
2000US-236499P.
2000US-238389P.
2000US-240542P.
                                                                                                                                                                                                                                                                                                                                                                                                            2001WO-US27219
                                                                                                                                                                                                                                                                                                                                                                                         2000US-229873P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note=
17..25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "Protein kinase domain" 36..256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16..257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers 15..266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   257
                                                                                                                                                                                                                                            Walia NK, Hafalia AJA, Yao MG, Gandl
Patterson C, Yue H, Baughn MR, Tribou
75, Lu Y, Ison CH, Au-Young J, Tang Y
), Marcus GA, Zingler KA, Lu DAM, Lal
), Kearney L, Policky JL, Thangavelu K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Protein kinase domain'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Protein kinase domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Eukaryotic protein kinase
                                                                                                                                                                                                                                                                                                          INC.
                                                                                                                                                                                                                                             Thangavelu K;
                                                                                                                                                                                                                                                                          Tribouley
                                                                                                                                                                                                                                                                                     Gandhi AR;
                                                                                                                                                                                                                                                        PG;
                                                                                                                                                                                                                                                                            ξ.
ξ
```

The present invention relates to human kinases (PKIN) and polynucleotides encoding such proteins. PKIN sequences of the invention are useful for diagnosing, treating or preventing disorders associated with aberrant expression of PKIN, particularly immune system disorders (e.g. acquired immune deficiency syndrome (AIDS), thymic hypoplasia, Crohn's disease, anaemia, asthma), neurological disorders (e.g. epilepsy, Charcot-Marie-Tooth disease or seizures), cell proliferative disorders (e.g. cancers such as adenocarcinoma, leukaemia, lymphoma, melanoma, myeloma, sarcoma), and developmental disorders (e.g. Down's syndrome). They are also used in gene therapy and protein therapy. The present sequence is human PKIN-18 protein.

Sequence 664 AA;

```
Š
                                         밁
                                                                       δõ
                                                                                                             Matches
                                                                                                                          Query Match
Best Local Similarity
90 HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS
                                  11 YVGPYRLEKTLGKGQTGLVKLGVHCVTCQKVAIKIVNREKLSESVLMKVEREIAILKLIE
                                                    30 YVGPYRLEKTLGKGOTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                           539;
                                                                                                         Conservative
                                                                                                      67.4%; Score 2767.5; DB 2 76.9%; Pred. No. 2.7e-178; Live 52; Mismatches 45;
                                                                                                                                      DB 23;
                                                                                                                                      Length 664;
                                                                                                    Gaps
                                     70
```

149

7;

. .

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
ABB62061 standard; Protein; 851 AA
                                                                                                                                                                                    Drosophila melanogaster
                                                                                                                                                                                                                                            Drosophila melanogaster polypeptide SEQ ID NO 12975.
                                                                                                                                                                                                                                                                    26-MAR-2002 (first entry)
N-PSDB; ABL06164.
            WPI; 2001-656860/75.
                                 Venter JC,
                                                                                         23-MAR-2000;
                                                                                                                  23-MAR-2001; 2001WO-US09231.
                                                                                                                                         27-SEP-2001.
                                                                                                                                                               WO200171042-A2
                                                                                                                                                                                                                      Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131
                                                        (PEKE ) PE
                                                                                11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIISALDFCHS
                                                                                                                                                                                                                                                                                                                                                                                      VTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKN 730
                                                                                                                                                                                                                                                                                                                                                                                                                       SPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPSARSTPLPGPPGSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AARRLTLEHIQKHIWYIGGKNEPEP-EQPIP-RKVQIRSLPSLEDIDPDVLDSMHSLGCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RKADVWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIRGEKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KLQVPTPEEMSNLTPESSPELAKKSWFGNFISLEKEEQIFVVIKDKPLSSIKADIVHAFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSPLSSPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLSR 389
                                                                                                                                                                                                                                                                                                                                                                            VTFTLLSGPSRRFKRVVETIQAQLLSTHDPPAAQHLSDTTN 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----TPVHTPKESPAGTPNPTPPSSP--SVGGVPWRARLNSIKNSFLGSPRFHRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRR 569
                                                        CORP NY
                                 Adams M,
                                                                              2000US-191637P
2000US-0614150
                                 댜
                                 PWD,
                                 Myers EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----VTPHPSPRGSPLPTPKG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                                                                                                                                                          605
                                                                                                                                                                                                                                                                                                                                                                                                                                               689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        250
```

New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell

Disclosure; SEQ ID NO 12975; 21pp + Sequence Listing; English

The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from (ABB57737-ABB72072) is

Sequence 851 AA;

ftp.wipo.int/pub/published\_pct\_sequences.

WIPO

밁 Ş δÃ 밁 Ş, 밁 ΩÝ 밁 Ş Ñ 밁 밁 δÃ 밁 δÃ 멍 Š 밁 Š 닭 Ş Query Match Best Local 9 Matches 250 130 146 FCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGE 642 ILVKGKPIATVKAHLIHAFLSMAELSHSVVSPTSFRVEYKRNGNGPVMFQRHVKFQVDIS 701 86 KLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALD 10 ENCOFYGPYRLEKTLGKGQTGLYKLGYHCYIGKKVAIKIINREKLSESYLMKVEREIAIM Local 70 KLIDHPHVLGLSDVYENKKYLYLILEHVSGGELFDYLVKKGRLTPKEARKFFRQIISALD PTSKTQTLPS---SMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQD---LPPRND---V IEVNPDRRLTLAEINRHPWYTAGGKGELELELPMMEV-----VQTHVIPTATAVDPDVLN KIRLINIKNSFLGSPREHRRKMQV-SADEV-HLTPESSPELTKRSWFGNLITTEKDETFT 641 RSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQIF RSVSGASTGLSSSPLSSP---RSPVFS-----FSPEPGA-----GDEARGG-GS DPPRKRLDTCRI--NGTNAPSYGQI-----SEGSPLTPRRQAFNFRSYSSTRNHQR 413 DPPRKRVDSPMLSRHGKRRPERKSMEVLSITDAGGGGSPV-PTRRALEMAQHS----QRS AICSLGCFKEKEKLIQELLSSSHNTEKVIYFLLLERKRRRPALEDDDEIAQKSRSELDAV IEVEPEKRLSLEQIQKHPWY-LGGKHEPD---PCLEPAPGRRVAMRSLPSNGELDPDVLE 321 FCHSHSICHRDLKPENLLLDEKNNIKIADFGMASLQPAGSMLETSCGSPHYACPEVIRGE LVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASG-GPSVFQKPVRFQVDIS 668 SYSRTPSHSSQKSIEGDVVVVREPRIERRDSLRQERGGG-----SPRDRGDCGIPPG RSPTTYTSSYRSSYHSPTRCNSPMSSAQQQANAISRPSSPAAGTRHSTYGDRDRSGHHS SPGGNSSGSTSASPSVHHRANSGPTIAIIVNPNGSPMMNNSSPGM--PGSPCNTPGGQLW 421; Similarity Conservative 47.5%; 96; Score 1952; DB 22; Pred. No. 3.6e-123; ----TPRASP---TGTPGTTPPPSPGGGVGGAAW Mismatches --RGPRGGGAGEQPPPPSARSTPLPG-PPG Indels 112; Length Gaps 549 470 304 265 205 145 69 583 525 507 473 189 24;

669

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                               Sequences ABB10981-ABB12330 represent 1350 novel human polypeptides, and sequences ABA08225-ABA09574 represent nucleic acids encoding them. The invention also relates to vectors and recombinant host cells comprising a nucleotide of the invention, methods of producing the novel polypeptides, antibodies against the polypeptides, methods of identifying compounds which bind to polypeptides in a sample, and methods of identifying compounds which bind to polypeptides of the invention. Although novel, many of the polypeptides of the invention have homology to known proteins, thereby giving an insight into their probable bindgical activities, and hence potential therapeutic applications. The polypeptides of the invention may have various activities, including cytokine, cell proliferation or cell differentiation activities; stem cell growth activity;
thrombolytic activities; receptor or ligand activities; or may be involved in oncogenesis, cancer cell proliferation or metastasis. Depending on their biological activities, polypeptides and nucleotides of the invention are useful for preventing, treating or ameliorating medical conditions, e.g., by protein or gene therapy. Such conditions include
                                                                                                        haematopolesis regulatory activity; tissue growth activity; immunomodulatory activity; activin- or inhibin-related activities; chemotactic or chemokinetic activities; haemostatic, thrombotic or chemokinetic activities;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 20; Page 140; 1963pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bone disorder; osteoporosis; vascular growth disorder; tissue regeneration; wound healing; infection; immune disorder; cell culture; drug screening; gene therapy; antiinflammatory; antiasthmatic; antiarthritic; haemostatic; antiarteriosclerotic; cytostatic; osteopathic; vasotropic; cardiant; virucide; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; cytokine; cell proliferation; cell differentiation; growth factor; haematopoiesis regulation; tissue growth; immunomodulator; activin; inhibin; chemotaxis; chemokinesis; thrombolysis; oncogenesis; proliferation; metastasis; cancer; tumour; haematopoietic disorder; myeloid cell disorder; lymphoid cell disorder; asthma; arthritis; chronic inflammatory condition; proliferative retinopathy; atherosclerosis; coronary heart disease; arterial ischaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-FEB-2000;
27-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human HrPOPK-1 homologue, SEQ ID NO:1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABB11052 standard; peptide; 301 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antifungal; vulnerary; antiulcer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-JAN-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uman proteins and DNA encoding sequences useful for preventing, reating or ameliorating a medical condition in a mammalian subject.g. arthritis and cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-457740/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AI-----CKQGDIADMLFALTFTLLSGNIRRFRRICEHIQSQVCS 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0496914.
2000US-0560875.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001WO-US03800.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RT.
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
ACC XXX ACC XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABB11680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88888888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cc cancers, haematopoietic disorders (e.g., myeloid or lymphoid cell cd disorders), chronic inflammatory conditions (e.g., asthma or arthritis), cc proliferative retinopathy, atherosclerosis, coronary heart disease, cc arterial ischaemia, bone disorders (e.g., osteoporosis), and abnormal cc vascular growth: Polypeptides involved with tissue regeneration and crepair (or nucleic acids encoding them) may be used to promote wound healing (e.g., of burns, inclsions and ulcers), while those with cc immunomodulatory activities may be used in the treatment of viral, cc bacterial and fungal infections in addition to immune disorders. CC Polypeptides with growth factor activity may be used in cell cultures to promote cell growth. For example, such polypeptides may be used to comanipulate stem cells in culture to give rise to neuroepithelial cells cthat can be used to augment or replace cells damaged by illness, cc autoimmune disease or accidental damage. The polypeptides and nucleotides may also be used in the diagnosis of the above conditions, and in drug corporated the present sequence represents a novel human cc polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                         myeloid cell disorder; lymphoid cell disorder; asthma; arthritis; chronic inflammatory condition; proliferative retinopathy; atheroselerosis; coronary heart disease; arterial ischaemia; bone disorder; osteoporosis; vascular growth disorder; tissue regeneration; wound healing; infection; immune disorder; cell culture; drug screening; gene therapy; antiinflammatory; antiasthmatic; antiarthritic; haemostatic; antiarteriosclerotic; cytostatic; osteopathic; vasotropic; cardiant; virucide; antibact.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; cytokine; cell proliferation; cell differentiation; growth factor; haematopoiesis regulation; tissue growth; immunomodulator; activin; inhibin; chemotaxis; chemokinesis; thrombolysis; oncogenesis; proliferation; metastasis; cancer; tumour; haematopoietic disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human Ser/Thr kinase homologue, SEQ ID NO:2050.
                                                                                                                                                                                     antitungal; vulnerary; antiulcer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABB11680 standard; peptide; 204 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27 HAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVURREKLSESVLMKVEREIAILK 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIR 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DDDNLRQLLEKVKRGVFHMPHF1PPDCQSLLRGM1EVEPEKRLSLEQTQKHPWYLGG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPF 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LIEHPHVLKLHDVYENKKYL---------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LIEHPHVLKLHGVYENKKYFPPDELTSGPSMLAQVSPHGKLSARRSWDLLSGFPRYLVLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1341.5; DB Pred. No. 1.5e-82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----YLVLE 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 301;
                                                                                                                                                                                                                     antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
```

Homo sapiens.

09-AUG-2001

```
Ş
                                                                                                S
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ct thrombolytic activities; receptor or ligand activities; or may be conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., by protein or gene therapy. Such conditions include conditions, e.g., asthma or ambidiate conditions (e.g., asthma or arthritis), coronary heart disease, conditions (e.g., asthma or arthritis), coronary heart disease, conditions (e.g., asthma or arthritis), coronary heart disease, conditions in cucleid acids encoding them) may be used to promote wound conditions (e.g., of burns, incisions and ulcers), while those with conditions in culture to many be used to promote wound conditions and fungal infections in addition to immune disorders.

Conditions are used in call turns to incoming the conditions and the conditions and the conditions of the conditions and uncleotides contained to the conditions of the conditions, and in drug and also be used to augment or replace cells damaged by illness, conditions, and in drug acceptance reports a novel human conditions.
                                                  밁
                                                                                                                                                  밁
                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequences ABB10981-ABB12330 represent 1350 novel human polypeptides, and sequences ABA0825-ABA09574 represent nucleic acids encoding them. The invention also relates to vectors and recombinant host cells comprising a nucleotide of the invention, methods of producing the novel polypeptides, antibodies against the polypeptides, methods of detecting the nucleotides or polypeptides in a sample, and methods of identifying compounds which bind to polypeptides of the invention. Although novel, many of the polypeptides of the invention have homology to known proteins, thereby giving an insight into their probable biological activities, and hence potential therapeutic applications. The polypeptides of the invention may have various activities, including cytokine, cell proliferation or cell differentiation activities; stem cell growth factor activity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 20; Page 227; 1963pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e.g. arthritis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human proteins and DNA encoding sequences useful for preventing, treating or ameliorating a medical condition in a mammalian subject
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; ABA08924.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-457740/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-FEB-2000; 2000US-0496914.
27-APR-2000; 2000US-0560875.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         haematopoiesis regulatory activity; tissue growth activity; immunomodulatory activity; activin- or inhibin-related activities; chemotactic or chemokinetic activities; haemostatic, thrombotic or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                        screening techniques. The present sequence represents a novel human
                                                                                                                                                                                                                                                                                                                                                                                                           polypeptide of the invention.
                                                                                                                                                                                     574 PTAEEMSSLTPESSPELAKRSWEGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPS 633
  694 LISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQPPPGRPDP 753
                                                     61
                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                     1 PTAEEMSSLTPESSPELAKRSWFGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPS 60
                                                     LSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFT 120
                                                                                                LSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFT 693
                                                                                                                                                                                                                                                          204;
                                                                                                                                                                                                                                                                                                                                                             204 AA;
                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001WO-US03800.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer
                                                                                                                                                                                                                                                        25.4%; Score 1043; DB 22; 100.0%; Pred. No. 1.2e-62; 0; Mismatches 0;
                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . _
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                               밁
                                                           οy
                                                                                              밁
                                                                                                                       δÃ
                                                                                                                                                          밁
                                                                                                                                                                                      Ş
                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                               The present invention provides the protein and coding sequences of a number of apoptosis associated proteins from the yeast Saccharomyces cerevisiae and the fungus Candida albicans. These can be used to identitreatments for fungal and yeast infections, for proliferative diseases and for apoptosis related diseases such as autoimmune diseases, ischaen and neurodegeneration. The present sequence is one of the C. albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAG70854 standard; Protein; 1349 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yeast and fungal nucleic acids encoding proteins involved in a pathway leading to programmed cell death, useful for treating proliferative disorders, or and fungal infections, or for preventing apoptosis in certain diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    03-JUL-2000; 2000WO-BE00077.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200102550-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Candida albicans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yeast; fungus; apoptosis; infection; proliferative disease; vaccine; autoimmune disease; ischaemia; neurodegeneration.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C albicans apoptosis associated protein #34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 24; Fig 2; 218pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contreras RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; AAH29890.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-367042/38.
                                                                                                                                                                                                                                                                                                                  proteins of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              certain diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (JANC ) JANSSEN PHARM NV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          æ
180 LQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDNLRQL
                               122 DILVERGPLPEVEAIKYFRQIILGTAYCHALGICHRDLKPENLLLDSQLNVKLADFGMAA 181
                                                                                            62 SELQDEETEKNGDGLPYGIEREIIIMKLLTHPNVLRLYDVWETSKALYLVLEYVEGGELF 121
                                                                                                                          68 EKLSESVLMK-----VEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSGGELF 119
                                                                                                                                                                                      20 PHPHPP------QHAQYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNR 67
                                                                                                                                                          N
                                                                                                                                                                                                                                        POCST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELSSSPRRGPPKDKKLLATNGTPL 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ELSSSPRRGPPKDKKLLATNGTPL 777
                                                             DYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMAS 179
                                                                                                                                                          PHSRQPSISSSIMSQSNHNHPQKIGPWKLGKTLGRGATGRVLLATHQTTGQKAAVKVVSK 61
                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                      1349 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                         Conservative 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        De Backer MD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Reekmans RJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99EP-0870141
                                                                                                                                                                                                                                        21.0%;
                                                                                                                                                                                                                                      Score 862; DB 22;
Pred. No. 2.1e-49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Luyten WHML,
                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                      DB 22;
                                                                                                                                                                                                                         321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Malcorps IKL;
                                                                                                                                                                                                                                                        Length 1349;
                                                                                                                                                                                                                         Indels 150;
                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                     ischaemia
                                                                                                                                                                                                                                                                                                                                                                                 identify
                                                                                                                                                                                                                         22;
```

Q

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
               Domain
                                                    Domain
                                                                                       Domain
                                                                                                                                                                                                                                             Human; kinase; enzyme; PKIN-7 protein; immune system disorder; anaemia; acquired immune deficiency syndrome; thymic hypoplasia; Crohn's disease; asthma; neurological disorder; epinepsy; Charcot-Marie-Tooth disease; AIDS; seizures; cell proliferative disorder; cancer; adenocarcinoma; leukaemia; lymphoma; melanoma; myeloma; sarcoma; developmental disorder; pown's syndrome; gene therapy; protein therapy; cytostatic.
                                                                                                                           Protein
                                                                                                                                                                Peptide
                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                     Human PKIN-7 protein
                                                                                                                                                                                                                                                                                                                                                                                                                        16-JUL-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAE21712 standard; Protein; 1369 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      737 KNLT---ALRALSEGNHASEELTLEDVENLKRRSASQP-----VPKRRQTPVLTRRP 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  645 RAEYKASGGPSVFQKPVRFQV--DISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRF 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         703 KRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSP 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             560 MQSAKISSGKRNSIIGKNNNNSNSNKRMSKRKSIRASMTTGLKRNSITMKLLSTYAKLSG 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TFYALLM----RYKHNQDDN---TNNNSPKKSTSFNNKVVRSGSKYSLNGTPRRKRASHI 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLSRHGKR-----RPERKSMEVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDRERLHRELRSEEENQEK 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EAELKAR----RELEKKKRRQKRRSILSSKKLSIIVKNDADPNNSEQELVDEGIKQPKRQS 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DDDWEYMDKQTKRTSATFAALCDKIFNQEDYDEEDEQLVDPEEKEAKEYERLMELERKKH 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGNFISLDKEEQ----IFLVLKDKPLSSIKADIVHAFLSIPSLSHS-----VLSQTSF 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPSKRYSYNQSPTKSPYGRRSNSQRQFENEPLKAKPRNIYNEIVDAQSNFSLPPSLPPSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SI-----TDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSSSPLSSP-RSPV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRK---MQVPTAEEMSSLTPESSPELAKRSW 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PSKDSR--YMIDEPNQPQLQQPALSQVPENP-------IVDESPDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PSRGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPP 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SVSRPTSFQYKSNPGAGA----TANRNSVARHSVASSANNSPRKSPYKSPYRSPYK 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KSLPHP-----HTGYKSLGSVRNIDKQILSNLTILWNDRPEEEIVDCLLKDGSNPEK 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LLKVQAGNFEMPVDEVSREARDLIARMLEVDPMRRISTEKILRHPLLTKYPMSNEDLISE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LEKVKRGVFHMP-HFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPW-----YLGG
/note= "בעהעה"
67..308
/note= "Protein kinase domain"
                                                                                       66..317
                                                                                                                                                                               Location/Qualifiers
                                                                                                                                       /label= Signal_peptide
                                                                                                    /label- Human_mature_PKIN-7_protein
                                                             "Eukaryotic protein kinase domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
```

Š

Q 밁 Ş 망 δÔ

VLYVLVCGALPFDGSTLQNLRARVLSGKFRIPFFMSTECEHLIRHMLVLDPNKRLSMEQI

ILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQI ENLLLDANLNIKIADFGFSNLFTPGQLLKTWCGSPPYAAPELFEGKEYDGPKVDIWSLGV

251

30;

YENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKP 159

```
밁
                                 Qy
                                                                                                                              Matches
                                                                               Query Match
Best Local Similarity
                                                                                                                                                              The present invention relates to human kinases (PKIN) and polynucleotides encoding such proteins. PKIN sequences of the invention are useful for diagnosing, treating or preventing disorders associated with aberrant expression of PKIN, particularly immune system disorders (e.g. acquired immune deficiency syndrome (AIDS), thymic hypoplasia, Crohn's disease, anaemia, asthma), neurological disorders (e.g. epilepsy, Charcot-Marie-Tooth disease or seizures), cell proliferative disorders (e.g. cancers such as adenocarcinoma, leukaemia, lymphoma, melanoma, myeloma, sarcoma), and developmental disorders (e.g. Down's syndrome). They are also used in gene therapy and protein therapy. The present sequence is human
                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                               New human kinases, useful for diagnosing, treating or preventing immune system disorders (e.g. Crohn's disease), neurological disorders (e.g. epilepsy), or cell proliferative disorders (e.g. cancers such as
                                                                                                                                                           PKIN-7 protein.
                                                                                                                                                                                                                                                                                                                                         Claim 62; Page 152-156; 218pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-329769/36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gururajan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bandman O,
                                                                                                                                                                                                                                                                                                                                                                       leukemia or lymphoma)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ramkumar J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Azimzai Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thornton M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (INCY-) INCYTE GENOMICS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-SEP-2000;
12 AAGAGTGGAGPAGRLLPPPPAPGSPAAPAAVSPAAGQPRPPAPASRGPMPARIGYYEIDRT 71
                            ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Burrill JD, N
Warren BA, N
                                                                                                                            1369 AA;
                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nguyen DB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-231357P
2000US-232654P
2000US-234902P
2000US-236499P
2000US-236389P
2000US-236389P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001WO-US27219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ding L,
                                                           20.7%; Score 851; DB 23; 29.4%; Pred. No. 1.2e-48; tive 124; Mismatches 291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patterson C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Protein kinase domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Walia NK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lu Y, Ison
Marcus GA,
Kearney L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ison CH, Au-Your
GA, Zingler KA,
Y L, Policky JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hafalia AJA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yue H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Au-Young J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Baughn MR,
                                                                                           Length 1369;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yao MG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lu DAM, La
Thangavelu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tang ra,
Lal PG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tribouley
                                                            Gaps
```

```
RESULT 10
AAW90879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮻
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
 PT DRR CONTRACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                    07-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW90879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW90879 standard; Protein;
                                                                                                                                                                                                                                                                                                                      Keratinocyte; regulatory protein; human; pKe#122; antiproliferative;
kinase; signal transduction; desmosome; dermatological condition;
                                                                                                                                                                                                                                                                                                                                                                    Human keratinocyte derived pKe#122 protein #2.
New regulatory polypeptide from keratinocytes, useful for diagnosis and
                                 N-PSDB; AAX82952
                                                                                                                                                                            06-SEP-1999;
                                                                                                                                                                                                            30-MAR-2000.
                                                                                                                                                                                                                                           WO200017232-A2
                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                         pemphigus vulgaris;
                                                                             Kramer M, Bechtel M,
                                                                                                           (KRAM/) KRAMER M.
                                                                                                                                              19-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               762 QPALLTHQLQRLRIQPSSPPPNHPNNHLFRQPSNSPP 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               364 LQSLRSDAYDHYSAIYSLLCDRHKRHKTLRLGALPSMPRALAFQAPVNIQAEQAGTAMNI 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SVPQVQLIN-----PENQIVEPDGTLNLDSDEGEEPSPEALVRYLSMRRHTVGVA 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLP--PR------NDV 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CKHKWMKLG--DADPNFD----RLIAECQQLKEERQVDPLNEDVLLAMEDMGL--DKEQT 363
                                                 2000-283542/24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ASIQAFKAHLEKMGNNSSIKQLQQECEQLQKMYGGQID-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSQTSFRAEYKASGGPS------VFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIY 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QLGQQPFRSRVWPPHLV------PDQHRSTYKDSNTLHLPTERFSPVRRFSDGA 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ELAK-----RSWFGNFISLDKEEQIFLVLKDKPLSSIK-ADIVH----AFLSIPSLSHSV 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAVTPVDEESSDGEPDQEAVQRYLANRSKR-----HTLAMTNPTAE----IPPDLQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGEQP-----PPPSARSTPLPGPPGSPRSSGGT--PLHSP--LHTPRA-SPTGT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DPRTEVMEDLQKLLPGFPGVNPQAPFLQVAP-----NVNFMHNLLPMQNLQPT 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DPPRKRVDSPMLSRHGKRRPERKSME---VLSI-TDAGGGGSPVPTRRALEMAQHS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QKHPWYLGGKHEPDPCLEPAPGRRVA-MRSLPSNGELDP---DVLESMASLGCFRDRERL 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGTTP---PPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSP 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GQLEYKEQSLLQPPTLQLLNGMGPLGRRASDGGANIQLHAQQLLKRPRGPSPLVTMTPAV 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -QRSRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGG 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----RSLQ--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----ERTLEKTQQQHMLYQQEQHHQILQQQIQDSICPPQPSPPLQAACEN 761
                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                              98DE-1042863
                                                                                                                                                                            99WO-DE02865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----PPPGRPDPELSSSPRRGPP
                                                                                                                                                                                                                                                                                                         psoriasis vulgaris; epidermis;
                                                                               Reinartz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     823 AA
                                                                                 4
                                                                                 Schaefer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               764
                                                                                 Ħ
                                                                               Wallich
                                                                                                                                                                                                                                                                                                         cosmetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                427
```

treatment of dermatological disorders, also in cosmetics

disorders and for cosmetic treatment of the epidermis. Nucleic acid (II) that encodes (I) is used; (i) to produce transgenic mammals (particularly mice and rats); and (ii) as source of sense and antisense oligonucleotides for diagnosis and treatment of dermatological disorders and for cosmetic treatment of the epidermis. (II), (I) and polypeptides (Ia) produced by splice variants of (II) are used to identify specific binding agents (potentially useful in medicine and cosmetics) that modulate their function and/or expression, especially inhibitors and activators. Cells and animals transformed with (II) are used to study (I)-induced changes in cell morphology and basic functions. This sequence represents the human keratinocyte protein pKe#122 described in pRe#122 (I), or its variants from human keratinocytes, which in activated keratinocytes is the same as, or similar to, the most highly expressed protein and has antiprolliferative activity. (I) is a kinase involved in signal transduction and is conjectured to be involved in cell-cell or cell-matrix interactions and/or formation of (hemi)desmosomes. Modulation of (I) will affect proliferation and differentiation of keratinocytes.
(I) is upregulated in some dermatclogical conditions, e.g. pemphigus vulgaris and psoriasis vulgaris. (I) is used to raise specific antibodies (Ab) which are used for diagnosis and treatment of dermatological Sequence This invention describes a novel human regulatory polypeptide designated of the invention. 823 AA;

밁 Qγ Š δÃ δÃ 밁 밁 DЬ Ş 밁 δÃ 닭 8 밁 Š 밁 Matches 256; Query Match Best Local 149 420 236 209 176 116 458 413 381 354 LLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLSRHG-KRRPERKSMEVLSITDAGGGG 412 324 L-PGPACPAFSAHSYTSNLGDYDEQALGIMQTLGV--DRQRTVESLQNSSYNHFAAIYYL 296 269 480 89 56 29 TGQKVAIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVSG 115 | :|||||::: :| | | | : ||: ::||: |||::||: | | | | | ||:|| GRSGGGGARGAMVIMSEFSADPAGQSQGQQKSLRVGFYDIERTLGKGNFAVVKLARHRV 88 GAKEGGGGSPAYHL------PHPHPHPPQHAQYVGPYRLEKTLGKGQTGLVKLGVHCI 55 LEPAPG-RRVAMRSLPSN-GELDPDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYL 353 GEMFDYLTSNGHLSENEARKKFWQILSAVEYCHDHHIVHRDLKTENLLLDGNMDIKLADF 208 GELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADF 175 LPTLRQRVLEGRFRIPFFMSQDCESLIRRMLVVDPARRITIAQIRQHRWM-----RAEPC LRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPWYLGGKHEPDPC GFGNFYKSGEPLSTWCGSPPYAAPEVFEGKEYEGPQLDIWSLGVVLYVLVCGSLPFDGPN GMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDDDN 235 TKTQVAIKIIDKTRLDSSNLEKIYREVQLMKLLNHPHIIKLYQVMETKDMLYIVTEFAKN 148 -EPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPSARSTPLPGP-------STDPFRPALLCPQPQTLVQSVLQAEMDCELQSSLQWPLFFPVDASCSGVFRPRPVSPSSL SPVPTRRALEMAQHSQRSRSVSGASTG--LSSS-----PLSSPRSPVFSFSP-----LDTAISEEARQGPGLEEEQDTQESL-PSSTGRRHTLAEVSTRLSPLTAPCIVVSPSTTAS Similarity Conservative 102; Mismatches 298; ---PGSPRSSGGTPLH-----SPLHTPRASP-TGTPGTTPPPSPGG 20.5%; Score 840.5; DB 2 Pred. No. 3.2e-48; DB 21; Indels 201; Length Gaps 542 538 479 419 380 323 295 268 505 457 27;

밁

539 PAEGTSSDSCLTFSASKSPAGLSGTPATQGLLGACSPVRL--ASPFLGSQSATPVLQAQG

596

```
RESULT 11
AAG65764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                            The invention provides novel human protein kinase polypeptides, 3714, 16742, 23546 and 13887 and nucleic acid molecules encoding them. The protein kinase polypeptides can be expressed by standard recombinant methodology.3714, 16742, 23546 or 13887 nucleic acids and polypeptides are useful for diagnostic and screening methods to identify subjects (at risk of) having cancer or cellular proliferation and/or differentiation disorders. 3714, 16742, 23546 or 13887 nucleic acids, polypeptides and modulators are useful for the treatment of cancer, particularly colon cancer or cellular proliferation and/or differentiation disorders. Other disorders associated with 3714, 16742, 23546 or 13887 expression or activity that can be treated include bone related disorders, inflammatory disorders, autoimmune diseases, cardiovascular disorders and liver
polypeptide 3714
                                                                                                                                                                                                                                                                                                                 New human protein kinase polypeptides, 3714, 16742, 23546 and 13887, useful in diagnosis of cancer or cellular proliferation or differentiation disorders and to screen for polypeptide modulators useful to treat such conditions
                 disorders, autoimmune diseases, cardiovascular disorders and liv
diseases. The present sequence represents a human protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein kinase; 3714; 16742; 23546; 13887; cancer; bone disorder; human; cytostatic; antiinflammatory; immunosuppressive; cardiant; hepatotrophic;
                                                                                                                                                                                                                                                                               Claim 4; Fig 1A-D; 169pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB; AA166822, AA166823.
                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-611632/70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-MAR-2000; 2000US-191846P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-MAR-2001; 2001WO-US09483.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200173050-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human protein kinase polypeptide 3714.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAG65764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAG65764 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       779 TALPAVPPPRLARLAPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        733 QTRPAGAPPRSLQPPPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      624 IVHAFLSIPSLSHSVLSQTS-FRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAEEMSS-----LTPESSPEL-----AKRSWFGNFISLDKEEQIFLVLKDKPLSSIKAD 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APCDGPGAAPLPSTLLTSGLPLLPPPLLQTGASPVASAAQLLDTH------LHIGTGP 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---DGSGGGGIYSVTFT----LISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGA 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ASRASRGGLSPFHAPAQSPGLHGGAAGSREGW------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLGGAVLLPVSFQEGRRASDTSLTQGLKAFRQQLRKTTRTKGFLGLNKIKGLARQVCQVP 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GVGGA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----SLLEEVLEQQRLLQLQHHPAAAP------GCSQAPQPAPAPFVI 726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -AWRSRLNSIRNS--FLGSPRFH---RRKMQVP 574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           688
                                                                                                                                                                                                                                                                                                                                                                                            . _
```

RESULT 12 AAB85786

AAB85786 standard; Protein; 783 AA

DXXXXX

29-OCT-2001

(first entry)

Human kinase PKIN-5

```
밁
                                  Š
                                                                      밁
                                                                                                    Qγ
                                                                                                                                        멍
                                                                                                                                                                     Ω
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                            ğ
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                        658
                                                                                                                                                                     599 FISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTS-FRAEYKASGGPSVF
                                                                                                                                                                                                                                                                             534
                                                                                                                                                                                                                                                                                                                 519
                                                                                                                                                                                                                                                                                                                                                   474
                                                                                                                                                                                                                                                                                                                                                                                                                    415
722 ASAAQLLDTH------LHIGTGPTALPAVPPPRLARLAPG
                                                                                                                                                                                                                                                                                                                                                                                    492
                                                                                                                                                                                                                                                                                                                                                                                                                                                      444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264 ARRITIAQIRQHRWM-----RAEPCL-PGPACPAFSAHSYTSNLGDYDEQALGIMQTLGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144 HIVHRDLKTENLLLDGNMDIKLADFGFGNFYKSGEPLSTWCGSPPYAAPEVFEGKEYEGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                              TIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQPPPG 749
                                                                                                  QKPVRFQVDISSSEGPEPSPRR-----DGSGGGGIYSVTFT----LISGPSRRFKRVVE
                                                                                                                                                                                                                                       SIRNS--FLGSPRFH---RRKMQVPTAEEMSS-----LTPESSPEL-----AKRSWFGN
                                                                                                                                                                                                                                                                        SPVRL--ASPFLGSQSATPVLQAQGGLGGAVLLPVSFQEGRRASDTSLTQGLKAFRQQLR 591
                                                                                                                                                                                                                                                                                                                                                                                                                WPLFFPVDASCSGVFRPRPVSPSSLLDTAISEEARQGPGLEEEQDTQESL-PSSTGRRHT
                                                                                                                                                                                                       KTTRTKGFLGLNKIKGLARQVCQVPASRASRGGLSPFHAPAQSPGLHGGAAGSREGW---
                                                                                                                                                                                                                                                                                                            SPLHTPRASP-TGTPGTTPPPSPGGGVGGA-----
                                                                                                                                                                                                                                                                                                                                            LAEVSTRLSPLTAPCIVVSPSTTASPAEGTSSDSCLTFSASKSPAGLSGTPATQGLLGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EKRLSLEQIQKHPWYLGGKHEPDPCLEPAPG-RRVAMRSLPSN-GELDPDVLESMASLGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QLDIWSLGVVLYVLVCGSLPFDGPNLPTLRQRVLEGRFRIPFFMSQDCESLIRRMLVVDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEP 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PHYLKLHDYYENKKYLYLVLEHYSGGELFDYLVKKGRLTPKEARKFFRQIYSALDFCHSY 150
                                                                                                                                                                                                                                                                                                                                                                                PPPPSARSTPLPGP----
                                                                                                                                                                                                                                                                                                                                                                                                                                               -----PLSSPRSPVFSFSP-----EPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQ 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RPGPARQPRPRSSDLSGLEVPQEGLSTDPFRPALLCPQPQTLVQSVLQAEMDCELQSSLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RHG-KRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTG--LSSS--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PHIIKLYQVMETKDMLYIVTEFAKNGEMFDYLTSNGHLSENEARKKFWQILSAVEYCHDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VGFYDIERTLGKGNFAVVKLARHRVTKTQVAIKIIDKTRLDSSNLEKIYREVQLMKLLNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --DRORTVESLONSSYNHFAAIYYLLLERLKEYRNAQ------CA
                                                                -----GCSQAPQPAPAPFVIAPCDGPGAAPLPSTLLTSGLPLLPPPLLQTGASPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 831.5; DB 2
Pred. No. 1.2e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                   ----SLLEEVLEQQRLLQLQHHPAAAP---
                                                                                                                                                                                                                                                                                                                                                                              -------PGSPRSSGGTPLH------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281; Indels 193;
                                                                                                                                                                                                                                                                                                            -----AWRSRLN 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                     671
                                                                                                                                                                                                       648
                                                                                                                                                                                                                                                                                                                                                                              518
                                                                                                                                                                                                                                                                                                                                                                                                                473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26;
```

```
Ş
                                                            В
                                                                                     Ş
                                                                                                                   밁
                                                                                                                                              Š
                                                                                                                                                                                 밁
                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                        8.5
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention provides human kinases (PKIN) and polynucleotides encoding PKIN. The PKIN polypeptides can be expressed using standard recombinant methodology. The PKIN polypeptides, polynucleotides, modulators and specific antibodies are useful in the diagnosis, treatment and prevention of cancer, immune disorders, disorders affecting growth and development, atherosclerosis, and other cardiovascular diseases, and lipid disorders and in the assessment of the effects of exogenous compounds on the expression of nucleic acid sequences of human kinases. The present sequence represents a human PKIN-5 polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 107-109; 126pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-514771/56.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-FEB-2000; 2000US-0183682

02-MAR-2000; 2000US-0186559;

09-MAR-2000; 2000US-0188606,

17-MAR-2000; 2000US-0189998,

30-MAR-2000; 2000US-0193851.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PKIN; kinase; cytostatic; immunosuppressive; immunostimulant; human; antiarteriosclerotic; cardiant; gene therapy; antisense therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (INCY-) INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-FEB-2001; 2001WO-US05240
                                 329
                                                                                                                        204
                                                                                                                                                                                 144
                                                                                                                                                                                                               151
                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                                                                      31
                                                                                                                                                                                                                                                                                                         24
                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                  EKRLSLEQIQKHPWYLGGKHEPDPCLEPAPG-RRVAMRSLPSN-GELDPDVLESMASLGC
                                                                                                                   QLDIWSLGVVLYVLVCGSLPFDGPNLPTLRQRVLEGRFRIPFFMSQDCESLIRRMLVVDP
                                                                                                                                      RADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEP : | : | | | : | | : | | : | | : | | : | : | : | : |
                                                                                                                                                                              HIVHRDLKTENLLLDGNMDIKLADFGFGNFYKSGEPLSTWCGSPPYAAPEVFEGKEYEGP
                                                                                                                                                                                                         SICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGR 210
                                                                                                                                                                                                                                                                                                                                 VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEH
 -- DRQRTVESLQNSSYNHFAAIYYLLLERLKEYRNAQ
                            FRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSPMLS
                                                          ARRITIAQIRQHRWM-----RAEPCL-PGPACPAFSAHSYTSNLGDYDEQALGIMQTLGV
                                                                                                                                                                                                                                          PHIIKLYQVMETKDMLYIVTEFAKNGEMFDYLTSNGHLSENEARKKFWQILSAVEYCHDH
                                                                                                                                                                                                                                                                      PHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSY 150
                                                                                                                                                                                                                                                                                                     VGFYDIERTLGKGNFAVVKLARHRVTKTQVAIKIIDKTRLDSSNLEKIYREVQLMKLLNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Buford N, Gandhi AR, Patterson C,
, Shih LL, Tribouley CM, Yao MG,
A, Lu DAM, Bandman O, Policky JL,
                                                                                                                                                                                                                                                                                                                                                                                                                             783 AA;
                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                               20.2%;
                                                                                                                                                                                                                                                                                                                                                               99;
                                                                                                                                                                                                                                                                                                                                                                               Score 831.5; DB 22;
Pred. No. 1.2e-47;
                                                                                                                                                                                                                                                          =
=
=
                                                                                                                                                                                                                                                                                                                                                                 Mismatches 281;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , Khan FA, Yu
Burrill JD,
Griffin JA,
                                                                                                                                                                                                                                                                                                                                                                 Indels 193;
                                                                                                                                                                                                                                                                                                                                                                                            Length 783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yue H;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Marcus GA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Thornton M;
ĊA
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                   90
354
                                                                                                                     263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . . .
```

```
VQ.
                                                                                                                                                                                                           RESULT 13
AAM78349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                         01-SEP-2000;
15-SEP-2000;
20-OCT-2000;
          Tang YT,
Zhao QA,
Xue AJ,
                                                                                                                                                                               03-FEB-2000;
27-APR-2000;
                                                                                                                                                                                                                                                                                                                                                    Human; cytokine; cell proliferation; cell differentiation; vaccine; peptide therapy; stem cell growth factor; haematog tissue growth factor; immunomodulatory; cancer; leukaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAM78349 standard;
                                                                                                                                                 20-JUN-2000;
19-JUL-2000;
                                                                                                                                                                                                                          05-FEB-2001; 2001WO-US04098
                                                                                                                                                                                                                                                      09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                              Human protein SEQ ID NO 1011.
                                                                                                                                                                                                                                                                                                                                                                                                                                          06-NOV-2001
                                                                  (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    722 ASAAQLLDTH------LHIGTGPTALPAVPPPRLARLAPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQPPPG 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LAEVSTRLSPLTAPCIVVSPSTTASPAEGTSSDSCLTFSASKSPAGLSGTPATQGLLGAC 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RPGPARQPRPRSSDLSGLEVPQEGLSTDPFRPALLCPQPQTLVQSVLQAEMDCELQSSLQ 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QKPVRFQVDISSSEGPEPSPRR-----DGSGGGGIYSVTFT----LISGPSRRFKRVVE 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTS-FRAEYKASGGPSVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KTTRTKGFLGLNKIKGLARQVCQVPASRASRGGLSPFHAPAQSPGLHGGAGGSREGW---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIRNS--FLGSPRFH---RRKMQVPTAEEMSS-----LTPESSPEL-----AKRSWFGN 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPVRL--ASPFLGSQSATPVLQAQGGLGGAVLLPVSFQEGRRASDTSLTQGLKAFRQQLR 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPLHTPRASP-TGTPGTTPPPSPGGGVGGA------AWRSRLN 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPLFFPVDASCSGVFRPRPVSPSSLLDTAISEEARQGPGLEEEQDTQESL-PSSTGRRHT 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----PLSSPRSPVFSFSP-----EPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQ 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RHG-KRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTG--LSSS-- 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------GCSQAPQPAPAPFVIAPCDGPGAAPLPSTLLTSGLPLLPPPLLQTGASPV
           Yang Y,
                       Wang D,
                                      Liu C,
                                                                                            2000US-0654936.
2000US-0663561.
2000US-0693325.
2000US-0728422.
                                                                                                                                                 2000US-0496914.
2000US-0560B75.
2000US-0598075.
2000US-0620325.
                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                       disorder; arthritis; inflammation
Drmanac RT, Abung, Wang J, Zhang J, Re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                768 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---SLLEEVLEQQRLLQLQHHPAAAP---
                         Ren
           R;
                      Zhou
n F, (
                                                                                                                                                                                                                                                                                                                                                                 factor; haematopoiesis;
                       Chen
                                      ש
                      R, Wang
                       Cao Y,
Vang ZW;
                                                                                                                                                                                                                                                                                                                                                                             therapy;
                                     Ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         648
```

WPI; 2001-476283/51.

N-PSDB; AAK51482

```
Š
                                         밁
                                                                            Š
                                                                                                                          밁
                                                                                                                                                                ρ
                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAK983323-AAM80302) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  activity, tissue growth factor activity, immunomodulatory activity and activin/inhibin activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleic acids encoding polypeptides with cytokine-like activities, useful in diagnosis and gene therapy -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Note: Records for SEQ ID NO 2110 (AAK52581), 2111 (AAK52582) and 3666 (AAM80020) are omitted as the relevant pages from the sequence listing were missing at the time of publication.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inflammation.
  585
                                                                                                                                                                                                                                                                                                 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         160
                                                                                                                               563
                                                                                                                                                                      484
                                                                                                                                                                                                                                                       437
                                                                                                                                                                                                                                                                                                                                                                                  384 TRYRSVSANPKQRRFSDQAGPPIPTSNSYSKKTQSNNAENKRPEEDRESGRKASSTAKVP 443
                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  stem cell
                                                                                                                                                                                                                                                                                               ASPLPGLERK-KTTPTPSTNSVLSTSTNRSRNSPLLERASLGQASIQNGKDSLTMPGSRA 502
                                                                                                                                                                                                                                                                                                                                                                                                                            -RYPSC-----EDQDLPP------RNDVDPPRKRVDS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEKRLSLEQIQKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYCHQ 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HPHYLKLHDYYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 99
                                         ASPSGHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVETLRPHVVGSGGNDKEK 662
                                                                                 PSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEE-MSSLTP------
                                                                                                                          NISSSGGAPDRTNFPRGVSSRSTFHAGQLRQVRDQQNLPY------GVT-P 606
                                                                                                                                                                    ---RGGGAGEQ---PPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPP 537
                                                                                                                                                                                                            STASASAAVSAARPRQHQKSMSASVHPNKASGLPPTESNCEVPRPSTAPQRVPVASPSAH 562
                                                                                                                                                                                                                                                     STGLSSSPLSSPR-----SPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGP-----
                                                                                                                                                                                                                                                                                                                                         ----PMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMA--QHSQRSRSVSG--A 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G--YTREEIQDSLVGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAHPHP 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCFRDRERLHRELRSEEENQEKMIYYLLLDRKE------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20; Page 3241-3243; 6221pp; English.
-ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              768 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 828.5; DB 22; Pred. No. 1.9e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 768;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         219
                                                                                                                                                                                                                                                                                                                                                                                                                            384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26;
```

Ş 밁 Š

90

HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS

16

30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89 HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 75

Matches Best Query Match

Local Similarity

Conservative 115;

20.2%;

Score 828; DB 23; Pred. No. 1.8e-47;

Length 691; Indels 142;

Mismatches

261;

Gaps

```
RESULT 14
AAE19050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DR X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PXXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                      PTPXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     XX
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X F X D
                                                                              The invention relates to Dishevelled (Dsh) associated kinase, referred to as PAR-1 kinase in Drosophila and human homologues of PAR-1 referred to as PAR-1A, PAR-1B (alpha and beta) and PAR-1C. The invention also provides nucleic acid molecules encoding such proteins. PAR-1 activates the Wnt pathway and is required for Wnt signalling in mammallan cells. The PAR-1 modulators can be used to reduce the expression and/or biological activity of PAR-1. They are useful for modulating, inhibiting or preventing the growth of cancer cells. They are also useful for treating other diseases of hyperproliferation. Sequences of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antisense therapy; Dsh.
Sequence
                                                                                                                                                                                                                                                                                                   Claim 7; Page 283-284; 297pp; English.
                                                                                                                                                                                                                                                                                                                                                                  associated kinase, referred to as PAR-1 kinase, useful i modulators which can be used for modulating, inhibiting
                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAD30397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sun T, Feng J, Reinhard C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200210402-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; Dishevelled associated kinase; PAR-1 kinase; enzyme;
PAR-1B alpha; PAR-1B beta; PAR-1C; cancer; hyperproliferati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human PAR-1B alpha protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAE19050 standard; Protein; 691 AA
                                            protein.
                                                                 are used in antisense therapy.
                                                                                                                                                                                                                                                                                                                                              the growth of cancer cells -
                                                                                                                                                                                                                                                                                                                                                                                      Isolated nucleic acids encoding the human and Drosophila Dishevelled associated kinase, referred to as PAR-1 kinase, useful for identifying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-206192/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-JUL-2000; 2000US-221860P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-JUL-2001; 2001WO-US23981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-JUN-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MAFKNIASKIANEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RRFKRVVETIQAQL 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GHEDF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSELHEKYMLL -- CMHGTP 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPS 699
  691 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -VQWEMEVCK-----LPRLSLNG-----VRFKRISGTS 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fantl WJ,
                                                                 The present sequence is human PAR-1B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Williams LT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hyperproliferative
                                                                                                                                                                                                                                                                                                                                                                    or preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAR-1A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              disease;
                                                                                   invention
                                                                 alpha
```

44444

999999

```
RESULT 15
AAE19051
    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                  Human; Dishevelled associated kinase; PAR-1 kinase; enzyme; PAR-1A; PAR-1B alpha; PAR-1B beta; PAR-1C; cancer; hyperproliferative disease; antisense therapy; Dsh.
                 Misc-difference
                                                               Misc-difference
                                                                                                           Misc-difference
                                                                                                                                                                                                                                                   Human PAR-1B beta protein.
                                                                                                                                                                                                                                                                                                                                                AAE19051 standard; Protein; 724 AA
                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                18-JUN-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             270
                                                                                                                                                                                                                                                                                                                                                                                                                            999
                                                                                                                                                                                                                                                                                                                                                                                                                                                           684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AS--STAKVPA---SPLPGL---ERKKTTPTPSTNSVLSTSTN------RSRNSP 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YSICHRDLKPENLLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGIYSVTFTLISGPSRRFKRVVETIQAQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSG 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LRQVRDQQNLPYGVTPASPSGHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVE 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------PPPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEE-MS 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LLERASLGQASIQNGKDSTAPQRVPVASPSAHNISSSGGAPDRTNFPRGVSSRSTFHAGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPSARSTP 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HKVQRSVSANPKQRRF-----SDQAGPAIPTSNSYSKKTQSNNAENKRPEEDRESGRK 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -MLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALE---MAQHSQRSRSVSGASTGLS 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G--YTREEIQDSLVGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAPSPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSP- 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEKRLSLEQIQKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                            -----VRFKRISGTSMAFKNIASKIANEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LHEKYMLL--CMHGTPGHEDF------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TLRPHVVGSGGNDKEKEEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L--PGPPGSPRSSGGTPLHSPLHTPRASPT-----GTPGTT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM 302
              /note= "Encoded by TGC strand of the sequence 276
                                                                                                         Location/Qualifiers
                                                             /note- "Encoded by AGG of the inverse complementary strand of the sequence shown as SEQ ID NO:8 (AAD33068)" 275
/note= "Encoded by CTG of the inverse complementary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                         713
                         of the inverse complementary shown as SEQ ID NO:8 (AAD33068)*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -VQWEMEVCK-----LPRLSLNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . .
```

*.*/..

identifying

```
Isolated nucleic acids encoding the human and Drosophila Dishevelled associated kinase, referred to as PAR-1 kinase, useful for identifyl
                                                            WPI; 2002-206192/26.
N-PSDB; AAD30398, AAD33068.
                                                                                                                                 Sun T, Feng J, Reinhard C,
                                                                                                                                                                                                                                                                                                              07-FEB-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 strand of the sequence shown as SEQ ID NO:8 (AAD33068) ^{\prime\prime} Misc-difference 277
                                                                                                                                                                                                                      28-JUL-2000; 2000US-221860P
                                                                                                                                                                                                                                                                30-JUL-2001; 2001WO-US23981
                                                                                                                                                                                                                                                                                                                                                        WO200210402-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                             (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strand of 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strand
288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  strand
291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                strand
289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "Encoded by GAG of the inverse complementary strand of the sequence shown as SEQ ID NO:8 (AAD33068)" 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "Encoded by TTT of the inverse complementary
strand of the sequence shown as SEQ ID NO:8 (AAD33068)"
284
                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "Encoded by TGA of the inverse complementary strand of the sequence shown as SEQ ID NO:8 (AAD330 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "Encoded by ACA of the inverse complementary strand of the sequence shown as SEQ ID NO:8 (AAD33068)" 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 strand
293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       strand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        strand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             strand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "Encoded by CTT of the inverse complementary strand of the sequence shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  strand of the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      strand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         strand
                                                                                                                                                                                                                                                                                                                                                                                                 /note= "Encoded by AAT of the inverse complementary
strand of the sequence shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     strand of the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "Encoded by TCT of the inverse complementary
trand of the sequence shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "Encoded by AAA of the inverse complementary
strand of the sequence shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note- "Encoded by TTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Encoded by CCG of the inverse complementary of the sequence shown as SEQ ID NO:8 (AAD330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Encoded by TTC of the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Encoded by GGG of the inverse complementary of the sequence shown as SEQ ID NO:8 (AAD330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Encoded by TTA of the inverse complementary of the sequence shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Encoded by GAA of the inverse complementary of the sequence shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Encoded by TAA of the inverse complementary of the sequence shown as SEQ ID NO:8 (AAD330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Encoded by GAA of the inverse complementary of the sequence shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Encoded by GAC of the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Encoded by TTG of the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of the sequence
                                                                                                                                   Fantl WJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the inverse complementary shown as SEQ ID NO:8 (AAD33068)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of the inverse complementary shown as SEQ ID NO:8 (AAD330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of the inverse complementary shown as SEQ ID NO:8 (AAD33068)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of the inverse complementary shown as SEQ ID NO:8 (AAD33068)"
                                                                                                                               Williams LT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NO:8 (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (AAD33068)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (AAD33068)"
```

胃胃

333

444

444

**444** 

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                               Š
                                                                                                                                             밁
                                                                                                                                                                               Ş
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to Dishevelled (Dsh) associated kinase, referred to as PAR-1 kinase in Drosophila and human homologues of PAR-1 referred to as PAR-1A, PAR-1B (alpha and beta) and PAR-1C. The invention also provides nucleic acid molecules encoding such proteins. PAR-1 activates the Wnt pathway and is required for Wnt signalling in mammallan cells. The PAR-1 modulators can be used to reduce the expression and/or biological activity of PAR-1. They are useful for modulating, inhibiting or preventing the growth of cancer cells. They are also useful for treating other diseases of hyperproliferation. Sequences of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              are used in antisense therapy. The present sequence is human PAR-1B beta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 7; Page 286-288; 297pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein.
                                                                                                       624
                                                                                                                                                603
                                                                                                                                                                                                                                                                                                                                                                                                                                   442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169
684 GGGIYSVTFTLISGPSRRFKRVVETIQAQL 713
                                                               663 LHEKYMLL--CMHGTPGHEDF-------VQWEMEVCK------LPRLSLNG
                                                                                                                                                                                      581
                                                                                                                                                                                                                              547 LRQVRDQQNLPYGVTPASPSGHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVE
                                                                                                                                                                                                                                                                      536
                                                                                                                                                                                                                                                                                                               487
                                                                                                                                                                                                                                                                                                                                                       502
                                                                                                                                                                                                                                                                                                                                                                                           446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           393 HKVQRSVSANPKQRRF-----SDQAGPAIPTSNSYSKKTQSNNAENKRPEEDRESGRK 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             386 -MLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALE---MAQHSQRSRSVSGASTGLS 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            210 RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            150 YSICHRDLKPENLLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                     IVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSG 683
                                                                                                                                             TLRPHVVGSGGNDKEKEEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSE
                                                                                                                                                                                        SLTP----
                                                                                                                                                                                                                                                                                                                                                                                                                                   SSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPSARSTP 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                   L--PGPPGSPRSSGGTPLHSPLHTPRASPT-----GTPGTT-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G--YTREEIQDSLVGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAPSPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEKRLSLEQIQKHPWYLGGKHEPD---PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYCHQ 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 108
                                                                                                                                                                                                                                                                                                          LLERASLGQASIQNGKDSTAPQRVPVASPSAHNISSSGGAPDRTNFPRGVSSRSTFHAGQ 546
                                                                                                                                                                                                                                                                                                                                                                                           AS--STAKVPA---SPLPGL---ERKKTTPTPSTNSVLSTSTN------RSRNSP 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVDPPRKRVDSP- 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   724 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative 115;
                                                                                                                                                                                                                                                                  ----PPPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEE-MS 580
                                                                                                                                                                                    -----ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKAD 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 828; DB 23;
Pred. No. 1.9e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                     535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          392
                                                               698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24;
```

Db 699 -----VRFKRISGTSMAFKNIASKIANEL 722

Search completed: April 16, 2003, 12:29:47 Job time: 49 secs

```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Perfect score:
                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
  795.5
792.5
791.5
791.5
791.5
791.6
767
766.5
766.5
767.5
763.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
753.5
                                                                                                                                                                                                                                                                                       Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein search, using sw model
                                                                                                                                                                                                                                                                                       Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          us-10-003-690-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   April 16, 2003, 12:28:38; Search time 48 Seconds (without alignments) 1558.179 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283224 seqs, 96134422 residues
  1 MSSGAKEGGGGSPAYHLPHP......PRRGPPKDKKLLAINGTPLP 778
                                                                                                                                                                                                                                                                                                                                                                                                             PIR_73:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                        pir1:*
pir2:*
pir3:*
pir4:*
                                                                                                                                                                                                                                                                                       Length DB
 T29858
A26030
T38929
T07788
S59941
S60303
S90100
S72513
S72513
S72513
S72513
                                                                                                               T07415
A56009
T52633
S59359
T41587
                                                                                                                                                                                                  T20941
S37928
G01025
T18611
S27966
JC1446
B90120
T10449
                                                                                                                                                                                                                                                                                       Ħ
                                                                                                                                                                                          G89287
                                                                                                                                                                                                                                                                                                                  SUMMARIES
       probable serine/
serine/threonine
serine/threonine
serine/threonine
SNF-related kina
probable protein
FOG2 protein - y
[hydroxymethylgil
protein kinase -
                                                                                 GIN4 protein - y
probable carbon
hypothetical pro
serine/threonine
changed division
                                                                                                                        probable serine/
qik protein - ch
hypothetical pro-
probable serine/
serine/threonine
serine/threonine
GIN4 protein - y
                                                                                                                                                                                       serine/threonine
SNF1-related pro
probable serine/
protein H39E23.1
                                                                                                                                                                                                                             probable serine
probable serine
                                                                                                                                                                                                                                                 serine/threonin
                                                                                                                                                                                                                                                        hypothetical pr
probable purine
                                                                                                                                                                                                                                                                                     Description
[hydroxymethylg
```

Result No.

	45	44	4.	4.	4	40	39	38	37	36	, (L)	34	ω w	32	ı L	30
513 1 500 304 510 2 T04145 726 2 T33998 891 2 740503 502 1 741561 891 2 A38903 651 2 T25244 1558 2 T25253 622 1 544859 480 2 C84667 441 2 C84667 441 2 T48202 445 2 T14736 440 2 T14736 440 2 T14736 440 2 T14736	614	621	623	624	624.5	626.5	627	636.5	649	656.5	663	666.5	672	678	695.5	/11.3
1 S60304 2 T04145 2 T40503 2 T40503 1 A41561 1 A41561 2 A38903 2 S52224 2 T29253 1 S44827 2 C84667 2 C84667 2 T48202 2 T48202 2 T19903 2 T14736 2 T14736	14.9	15.1	15.2	15.2	15.2	15.3	15.3	15.5	15.8	16.0	16.1	16.2-	16.4	16.5	16.9	17.3
	445	440	440	445	421	441	480	622	1558	651	891	502	891	726	510	5 L 3
	N	Ŋ	N	N	N	N	N	ب	N	2	N	Н	N	N	Ν	۳
serine/t hypothet hypothet protein serine/t probable serine/t	T50802	T14735	T14736	T09903	T48202	C84667	A86427	S44859	T29253	S52244	A38903	A41361	T40503	T33998	T04145	S60304
	serine,	probable serine/tl	probable serine/tl	serine/threonine-s	protein kinase AK2	probable protein	probable serine/th	serine/t	hypothet	рб9Ед3 р	protein kinase	serine/threonine-s	protein kinase ki	hypothetical prote	serine/threonine	serine/threonine-s

## ALIGNMENTS

RESULT 1 T20941

ne-s ne-s nase nase in k yea yea glut glut	ne-s ne-s yea n ca ncte ne-s on r	orote le/th le/th chic chic rote rote	orote ne p ne p ne/th	, ğ,	
		· ·	; ; n		
	•				
Qy 324 ASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQ-DLPPRNDVDPPR 379	Qy 204 GEKYDGRRADMWSCGVILFALLVGALPEDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLR 263.	OF INCLIENT VINDALE ENDOLLE LEVER YOUR LAND THE NEW PROPERTY OF THE PROPERTY O	Query Ma Best Loc Matches	A; MCLECULE LYPE: DNA A; Residues: 1-887 (WIL) A; Residues: 1-87 (WIL) A; Cross-references: EMBL: Z70207; PIDN: CAA94127.1; GSPDB: GN00028; CESP: F15A2.6 A; Experimental source: clone F15A2 C: Genetics: A; Gene: CESP: F15A2.6 A; Map position: X A; Introns: 32/1; 63/3; 92/2; 139/2; 189/3; 328/2; 448/2; 516/3; 604/2; 684/3; 735/2;	hypothetical protein F15A2.6 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Accession: T20941 R;Gregory, J. R;Gregory, J. Submitted to the EMBL Data Library, March 1996 A;Accession: T20941 A;Accession: T20941 A;Status: preliminary; translated from GB/EMBL/DDBJ A;Status: preliminary; translated from GB/EMBL/DDBJ

밁 δÃ

밁 Š 밁 δÃ ₽ ρy Ş В Š

日

```
Yeast 9, A; Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   probable purine nucleotide-binding protein YKL101w - yeast (Saccharomyces c: N;Alternate names: protein YKL453 C;Species: Saccharomyces cerevisiae C;Date: 03-May-1994 *sequence_revision 03-May-1994 *text_change 24-Sep-1999 C;Accession: S37928; S39084 C;Cheret, G.; Fukuhara, H.; Bolotin-Fukuhara, M.; Daignan-Fornier, B.; Pallisubmitted to the Protein Sequence Database, March 1994
                                                                                                                                                                                                                                                                                                                                                                                                          A;Map position: 11L G;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homol C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homology crip-specific protein kinases; protein kinase homology crip-specific protein kinases; protein k
                                                                                                                                                                                                                                                                                                                                                             F;87-95/kegion: Fr
F;85/Binding site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: DNA
A;Residues: 1-1518 <CHR>
A;Cross-references: EMBL:Z28101; NID:g486168; PIDN:CAA81941.1; PID:g486169; MIPS:YKL101v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: SGD:S0001584; MIPS:YKL101w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: SGD: HSL1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Experimental source: strain S288C C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:X71133; NID:g431205; PIDN:CAA50456.1; PID:g431215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Residues: 1-1518 < PAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: S39084; MUID:94078677; A; Accession: S39084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Pallier, C.; Valens, M
Yeast 9, 1149-1155, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Experimental source: strain S288C R; Pallier, C.; Valens, M.; Puzos, V.; Fukuhara, H.; Cheret,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: S37920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: S37928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein kinases.
                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              440
      138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       685 GGIYSVTFTLISGPSRRFKRVVETIQAQLLSTHDQPSVQALADEKNGA--QTRP 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          586 SNGTAESDSEDSQMIDTTDLVKKSWFGSLASSMSVERDDTHCVPVQGKTLNSIKAELIRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          700 TPTYVVQFVLLAGPVRRFKRLVEHLSAIL----QNSTQQRADRQQQAALMVRP 748
                                                                71
                                                                                                                              78
                                                                                                                                                                                        3
                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA sequence analysis of a 17 kb fragment of yeast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FLQIHELSHSVVGQNCFRVEYKRGPTVGGSVFSRGIKMNVDII-----PSPQQVVIAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FLSIPSLSHSVLSQTSFRAEYK--ASGGPSVFQKPVRFQVDISSSEGPEPSPRRDG-SGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QVPTAEEMSSLTPE-SSPELAKRSWFGNF---ISLDKEEQIFLVLKDKPLSSIKADIVHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ESVVVSSSTMISTNSSTNSLIAGNSQTSIGSTSG--PWRSKLNNIKNSFLGTPREHRRKM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LSSSPLSSPRSPV-----FSFSPEPGAGDEARGGGSPTSKT------QTLPS 480
      SNVSSPSIASREHSNHSQTNPYGIEREIVIMKLISHTNVMALFEVWENKSELYLVLEYVD
                                                                                                                                                                                        VGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SGGTPLHSPLHTPRASPTGTPGTTPPPSPGGGVGGAAWRSRLNSIRNSFLGSPRFHRRKM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AARHVRDAQERRESRDSGRGSSRKESKDRSDKSASSSSCKNDASSTSSVPHKYSPPSVMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---SPTESPRSSTRDLFGSSSSSSYSARAGEDRDRGRSASRSTNSYHYYTQPVDPQTLAE
                                                                                                                          VGPWKLGKTLGKGSSGRVRLAKNMETGQLAAIKIVPKKKAFVHCSNNGTVPNSYSSSMVT
                                                                   -SESVLMK----
                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                ATP/GTP (Lys) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -RGPRGGGAGE--
                                                                                                                                                                                                                                                                                   20.4%;
                                                                                                                                                                                                                                                     135;
                                                                   -VEREIAILKLIEHPHVLKLHDVYENKKYLYLVLEHVS 114
                                                                                                                                                                                                                                                                                   Score 836; DB 2
Pred. No. 1e-22;
                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PMID:8256524
                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -- QPPPPSARSTPLPGPPGSPRS
                                                                                                                                                                                                                                                         261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Daignan-Fornier, B.; Pallier, 1994
                                                                                                                                                                                                                                                                                                                Length 1518;
                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Saccharomyces cerevisiae)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chromosome XI physically log
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G.; Sor, F.;
                                                                                                                                                                                                                                                         246;
                                                                                                                                                                                                                                                     Gaps
         197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 467
                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bolotin-Fukuha
                                                                                                                                                                                                                                                         29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             c:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Puzo
                                                                                                                                                                                                                                                                                                                                                                                                                                           serine/threonine protein kinase - human
C;Species: Homo sapiens (man)
C;Date: 21-Dec-1996 #sequence_revision |
                                                                                       A;Cross-references: EMBL:X97630; NID:g1310674
C;Superfamily: unassigned Ser/Thr or Tyr-specific
F;18-271/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Õ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                              A; Residues: 1-745 < NAV>
                                                                                                                                                                                                                  A; Status: preliminary; translated A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                   A; Reference number: A; Accession: G01025
                                                                                                                                                                                                                                                                                                                                                R; Navarro, E. submitted to the EMBL Data
                                                                                                                                                                                                                                                                                                                                                                                                                 C; Accession: G01025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G01025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            334 RLHRELRSEEENQEKMIYYLLLDRKERY-----PSCEDQDLPPRNDVDPPRKRVDSPMLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               234 DNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLSLEQIQKHPW------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              591 RSRRSLRLSNSRLSLSASTSRETVHDNEMPLPQLPKSPSRYSLSRRAIHASPSTKSIHKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGELFDYLVSKGKLPEREAIHYFKQIVEGVSYCHSFNICHRDLKPENLLLDKKNRRIKIA 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNIKKLLLKVQSGKYQMPSNLSSEARDLISKILVIDPEKRITTQEILKHPLIKKYDDLPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVILFALLVGALPFDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKN-NIRIA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PVLAQKSQFSINTLSQPESDKAEAEAVTLPPAIPIFNAS-----SSRIFRNSYTSISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NTGLR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQ-----RSRSVSGASTGL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DFGMAALELPNKLLKTSCGSPHYASPEIVMGRPYHGGPSDVWSCGIVLFALLTGHLPFND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QLLSTHDQPSVQALADEKNGAQTRPAGAPPRSLQP-----PPGRPDPELSSSPRR 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SFPIFEK----ENTLSSSYLEEQKPKR----AALSDITNSFNKMNKQEGMRIEKKIQRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---VFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQ-A 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DDPLPSKKPASENVNKSEPHSLESDSDFEILCDQILFGNALDRILEEEED-----NEKER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LHTPRASPTGTPGTTPPPSPGGGVGGAAWRSRLNSI-RNSFLGSPRFHRRKMQV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NKVLRKMRKDNMARGKSNSD--LHLLNNVSPSIVTLHSKGEIDESILRSLQILWHGVSRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QLQKKNDRPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DTQRQRQNDTKSSADTFTISGVSTNKENEGPEYP----TKIEKNQFNMSYKPSENMSGLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----PTAEEMSSLTPESSPE-----LAKRSWFGNFIS--LDKEEQIFLVLKDK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LPSRGPRGGGAGEOPPPPSARST-----PLPGPPGSP-----RSSGGTP----LHSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LITAKLLQKPMSEEKLFYSLLLQYKQRHSISLSSSSENKKSATESSVNEPRIEYASKTAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LSRKNIAAT - ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----YLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -SSSPLSSPRS--------PVFSFSPEPGAGDEARGGGSPTSKTQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----PLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPS---
                                                                                                                                                                                                                                                                                                                      H00564
                                                                                                                                                                                                                                                                                                                                                                                                                                              #sequence_revision 06-Jun-1997
      20.2%;
                                                                                                                                                                                                                                                                                                                                                   Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---SENNDVKTLHSLEI--HSEDTSTVNQNNAITGVNTEINA 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----VAARRTLQNSASKRSLYSLQSISKRSLNLNDLLVF
      Score
Pred.
                                                                                                                                                                                                                                                         from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                       April 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -PLKPIQHQELRVNSLPNDQGKPSLSLDPRR
      828; DB 2;
No. 1.1e-22;
                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                 #text_change 16-Dec-1998
                                Length
                                                                                                                          kinases; protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    968
```

615 694 573 650 520 590 477 440

388 435 333 377 284 317

Ş 밁 Ş

밁

```
A;Reference number: Z18997
A;Accession: T18611
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-1192 <WILL>
                                                                                                                                                                                                       probable serine/threonine-specific protein kinase (EC 2.7.1.-), long splice N;Contains: probable serine/threonine kinase, short splice form C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 04-Mar-2000 C;Accession: T18611; T18610; T23144; T23143
                                                                                                                                          submitted to the EMBL Data Library, October 1996
A; Reference number: Z18997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      730 MAFKNIASKIANEL 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RRFKRVVETIQAQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPS 699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EEFREAKPRSLRFTWSMKTTSSMEPNEMMREIRKVLDANSCQSELHEKYMLL--CMHGTP 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASPSGHSQGR--RGASGSIFSKF--TSKFVRRNLNEPESKDRVETLRPHVVGSGGNDKEK 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A---PQRVPVASPSAHNISSSGGAPDRTNFPRGVSSRSTFHAGQLRQVRDQQNLPYGVTP 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ARSTPLPGPPGSP-----RSSGGTP-----LHSPLHTPR----ASPTGTPGTTPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STASASAGVSAAR------PRQHQKSMSGSVHPNKASGLP---PTESNC-EVPRPST 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPPPPS 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PASPLPGLERKKTTPTPSTNSVLSTSTNRSRNSPLLERASLGQASIQNGKDSLTMPGSRA 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HKYQRSYSANPKQRRFSDQAGPAIPTSNSYSKKTQSNNAENKRPEEDRESGRKASSTAKV 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G--YTREEIQDSLVGQRYN-EVMATYLLLGYKSSELEGDTITLKPRPSADLTNSSAQFPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PSKRGTLEQIMKDRWMNVG-HEDDELKPYVEPLPDYK------DPRRTELMVSM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEKRLSLEQIQKHPWYLGGKHEPD----PCLEPAPGRRVAMRSLPSNGELDPDVLESMASL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------PPRKRVDS-----PMLSRHGK-----RRPE-----RKSM----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YYGPYRLEKTLGKGQTGLYKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ESSPELAKRSW-FGNFISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----EVLSITDAGGGGSPVPTRRALEMA--QHSQRSRSVSG--A 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ·VQWEMEVCK-----LPRLSLNG-----VRFKRISGTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         176;
                                                                                                                                                                                                                                                                                                                                                        long splice form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28;
                                                                                                                                                                                                                                                                                                                                                            Caen
                                      õ
                                                                                                       В
                                                                                                                                                             Q
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                     멁
                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Keywords: alternative splicing; ATP; phosphotransferase; serine/threonine-specific F;1-1192/Product: probable serine/threonine-specific protein kinase, long splice form F;1-487,536-1192/Product: probable serine/threonine-specific protein kinase, short specific protein kinase, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Genetics:
A;Gene: CESP:H39E23.la; CESP:H39E23.lb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   submitted to the EMBL Data Library, June 1997 A; Reference number: Z19696 A; Accession: T23144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Introns: 10/3; 33/3; 67/3; 139/2; 183/3; 451/3; 487/3; 535/3; 631/1; 825/2; 914/3; C;Keywords: alternative splicing; ATP; phosphotransferase; serine/threonine-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Residues: 1-487,536-1192 <WIL4>
A;Cross-references: EMBL:Z96102; PIDN:CAB54262.1; GSPDB:GN00023; CESP:H39E23.1b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues: 1-487,536-1192 <WIL2> A; Cross-references: EMBL: Z81027;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:Z81027; PIDN:CAB54179.1; GSPDB:GN00023; CESP:H39E23.1a
A;Experimental source: clone AH10
A;Accession: T18610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Experimental source: clone H39E23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: T23143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Experimental source: clone H39E23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type:
A; Residues: 1-119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; McMurray, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Experimental source: clone AH10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:Z96102; PIDN:CAB54263.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                         501
                                                                                                                                                                                                                              512
                                                                                                                                                                                                                                                                                        388
                                                                                                                                                                                                                                                                                                                                                     458
                                                                                                                                                                                                                                                                                                                                                                                                               331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match 19.8%;
Local Similarity 28.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N
PLPGPPGSPRSSGGT------GLHSPLHTPRAS-----PTGTPGTTPPPSPGG----------G
                                                                                                                                                                                                                                                                                                                                                                                                      DRERLHRELRSEEENQEKMIYYLLLDRKERYPSCE---DQDLPPRNDVDPPRKRVDSPML
                                                                                             ANAOKHQQSSAAPSSGSSSSRRSSQNDAAATAAGGTVVMSGTRHGGVQMRAQPTSRQATI
                                                                                                                                                                                                                       GQHPAGVITRE--HVTSSSASGSSASP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LEQIQKHPWYLGGKHEPD---PCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DLKPENILLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMW 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LLKTIGKGNFAKVKLAKHVITGHEVAIKIIDKTALNPSSLQKLFREVKIMKQLDHPNIVK 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVERETAILKLIEHPHVLK 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSGA-KEGGGGSPAYHLPHPHPHP-----PQHAQ------YVGPYR 35
                                                                                                                                                                                                                                                                              SRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSS---SP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEKRLS 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DLKAENLLLDQDMNIKIADFGFSNTFSLGNKLDTFCGSPPYAAPELFSGKKYDGPEVDVW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHR 155
                                                                                                                                                       LSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQ---TLPSRGPRGGGAGEQPPPPSARST-
                                                                                                                                                                                                                                                                                                                                        NKAAILESVEKEKFEDIHATYLLLGERKSDMDASEITMAQSLLSHSSINV-----SSSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LDNIMKDRWMNVGYEDDELKPFIE-------PPKDQIDEQRIEKLIQI--FQLGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLVINPQRRSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSGAPAASSGGSSARYSSSGRSHPTSGSSSSHARSTGQSGMSSRSAARRNDQDVHVGKYK 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1-1192 <WIL3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative 127; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 814; DB 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIDN:CAB54178.1; GSPDB:GN00023;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                    SRYSRSSATATGASITAGSALASA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  317; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSPDB:GN00023; CESP:H39E23.la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  194;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CESP: H39E23.1b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  long splice form kinase, short sp
                                543
                                                                                                                                                                                                                 560
                                                                                                                                                                                                                                                                           444
                                                                                                                                                                                                                                                                                                                                        511
                                                                                                                                                                                                                                                                                                                                                                                                      387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         291
```

Š

당 Š 밁 Ş 밁 δã 밁 Š 밁 á 밁 Š 밁 õ 밁 Ş 밁 Ş 밁 õ ₽ Š 밁 Š

Ş 밁

541 SILIAPPSYKPSSMYTOLAQIPPLIMNSTANTSSAAQPSYGITOTKKIADPKGRIPLASTA 680  544 VGGAMARSKLASIRNSTASSPEHERRY— "OVPTAENSKI." - PP	ρ	Qу Db	Qу	Qу БЬ	Qy Db	Db Oy	D 04	Que Bes Mat	A; MOL A; Res A; Cro C; Sup C; Key F; 54- F; 62-	R; Mah submi A; Des A; Ref A; Acc	proba N; Alt C; Spe C; Dat	RESULT	Д	δ	ᅡ	Qy !	D Qy	Db	Qy	Дb	Qy	ф
	375 VDPPRKRVDSDMLSRHGKRRPERKSMEVLSITDAGGGGSPVPTRRALEMAQ	324 ASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRND :    :    :    :    :    :    :    :	270 PEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPUVLESM	210 RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE  :	150 YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 	90 HPHYLKLHDYYENKKYLYLYLEHYSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS   :::   :	30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAİKIVNREKLSESVLMKVEREİAILKLIE ::	1%; Score 797; DB 2; Length 713; 0%; Pred. No. 1.3e-21; 112; Mismatches 254; Indels 138; Gaps 2	H> MBL:M80359; NID:g189511; PIDN:AAA59991.1; PID:g189512 MBL:M80359; NID:g189511; PIDN:AAA59991.1; PID:g189512 gned Ser/Thr or Tyr-specific protein kinase; protein kinase photransferase; serine/threonine-specific protein kinase eln kinase homology <kin> in kinase ATP-binding motif</kin>	, K.K.; Som, S.; Parsa, I. the EMBL Data Library, January 1992 n: Sequence of a cDNA encoding 78kD marker protein lost in chemically number: S27966 S27966	<pre>le serine/threonine-specific protein kinase (EC 2.7.1) - human rnate names: protein p78 les: Homo sapiens (man) : 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 04-Mar- ssion: S27966</pre>			16 THDQPSVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGPPKDKKL	VATSQQMSRSATINSANMGA	VFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLLS	ISLDKEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPS 65	41 SSSATSTAPLQKSGSQISHAPTEPVIREDDDENNSENQNGNVPLIGGVGPQTSPAVQVPT	85ESSPELAKRSWFGNF	VQGHRTATGAVAANNGGIPSHRDHAQQQQYMNQLISSTMMSKLINKIPAAGGTAATSSSS	VGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTP	SLLQPPSYKPSSNTTQIAQIPPLFNRNSTATSSAAQPSTGITGTRKIADPKGRIPLNSTA
	_				<u>,</u>				molc	luce .			<u> </u>							· .		

```
B
                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                             밁
                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
691 KRISGTSIAFKNIASKIANEL 711
                                                      693 TLISGPSRRFKRVVETIQAQL 713
                                                                                                             644 DANNCDYEQRE-RFLLFCVHGDGHAENLVQWEMEVCK-----LPRLSLNG-----VRF 690
                                                                                                                                                                       633 SLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTF 692
                                                                                                                                                                                                                              584 GSTTLFSKLTSKLTRSRNVSAKQKDENKEAKPRSLRFTWSMKTTSSMDPGDMMREIRKVL 643
                                                                                                                                                                                                                                                                                                                                           525 THSISSAATPDRIREPRGTASRSTEHGQPR-ERRTATYNGPPASPSLSHEATPLSQTRSR 583
                                                                                                                                                                                                                                                                                                                                                                                                     541 GGGVGGAAWRSRL-----NSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRS- 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481 RGPRGGGAGEQPPPPSARSTPLPGPPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPPSP 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                427 SDLKEDGISSRKSTGSAVGGKG----IAPASPMLGNASNPNKADIPE-----RKKSSTVPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377 LNNSTGQSPHHKVQRSVSSSQKQRR-----YSDHAGPGIPSVVAYPKRSQTSTAD 426
                                                                                                                                                                                                                                                                                     ----WFGNFIS-LDKEEQIFLVLKD-----KPLS-----SIK-----ADIVHAFLSIP 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SNTASGGM-----TRRNTYV----CSERTIDDR--HSVIQNGKENST-IPDQRTPVAS 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSQR-----SRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSKTQTLPS 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      478
```

serine/threonine-specific protein kinase (EC 2.7.1.-) AK21 - Arabidopsis thaliana N; Alternate names: protein kinase SNF1 homology C; Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 30-Sep-1993 #sequence\_revision 30-Sep-1993 #text\_change 11-Jun-1999 C;Accession: JC1446; S58266; S66334 A; Dicture: Type: DNA
A; Molecule type: DNA
A; Residues: 144-198 <THU>
A; Residues: 144-198 <THU>
A; Cross-references: EMBL; X86966; NID: g928909; PIDN: CAA60529.1; PID: g928910
A; Cross-references: EMBL; X86966; NID: g928909; DITTICH, P. R;LeGuen, L.; Thomas, M.; Bianchi, M.; Hallord, N.G.; Kleis, M. Gene 120, 249-254, 1992
A;Title: Structure and expression of a gene from Arabidopsis thaliana encoding a prot A;Reference number: JC1446; MUID:93013041; PMID:1339373 A;Cross-references: GB:M93023; NID:g166599; PIDN:AAA32736.1; PID:g166600 R;Thuemmler, F.; Kirchner, M.; Teuber, R.; Dittrich, P. submitted to the EMBL Data Library, May 1995 A; Status: preliminary A; Reference number: S58256 A; Accession: S58266 A; Description: Differential accumulation of the transcripts of 22 novel protein kinas A; Molecule type: DNA A; Residues: 1-512 <LEG> A; Accession: JC1446 M.; Bianchi, M.; Halford, N.G.; Kreis, M.

R;Thuemmler, F.; Kirchner, M.; Teuber, R.; Dittrich, P.
Plant Mol. Biol. 29, 551-565, 1995
A;Title: Differential accumulation of the transcripts of 22 novel protein kinase gene A;Reference number: S66314; MUID:96123233; PMID:8534852
A;Accession: S66334 A;Molecule type: DNA A;Residues: 144-198 <TH2> A;Cross-references: EMBL:X86966; NID:g928909; PIDN:CAA60529.1; PID:g928910 C;Comment: This enzyme plays an important role in a signal transduction cascade regul

A;Introns: 64/1; 125/3; 186/3; 230/3; 292/3; 322/3; 350/3; 396/3; 475/3 C;Function:

C; Genetics:

C;Keywords: ATP; magnesium; phosphotransferase; serine/threonine-specific protein kin F;17-271/Domain: protein kinase homology <KIN> A;Description: catalyzes the formation of peptidyl-serine-phosphate or peptidyl-threo C;Superfamily: AMP-activated protein kinase; protein kinase homology

F;25-33/Region: protein kinase ATP-binding motif F;48,67,142,144/Active site: Lys, Glu, Asp, Lys \*status predicted F;147,151/Binding site: magnesium (Asn, Asp) \*status predicted DB 1; Length 512;

19.48;

Score 795.5;

Query Match

Best Local Similarity

```
밁
                                                                                              Š
                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                  ρy
                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SNF1-related protein kinase [imported] - Guillardia theta nucleomorph C;SpecLes: nucleomorph Guillardia theta A;Note: a nucleomorph is the vestigial nucleus of a eukaryotic endosymbiont C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 24-May-2001 C;Accession: B90120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A:Title: The highly reduced A:Reference number: A99082; A:Accession: B90120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Douglas, S.; Zauner, S.; Fraunholz, M.; Beaton, M.; Penny, S.; Deng, L.T.; Wu, Nature 410, 1091-1096, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Map position: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: kin(snf2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:AF083031; NID:g13794278; PIDN:AAK39655.1; GSPDB:GN00152
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Molecule type: DNA Residues: 1-401 <DOU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Keywords: nucleomorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genome: nucleomorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
|:| :||:|||:||:||:|| ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:|: ||:
                                                                              207 YDGRRADMWSCGVILFALLVGALPFDD--DNLRQLLEKVKRGVFHMPHFIPPDCQSLLRG 264
                                                                                                                                                                                                             147 CHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEK 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199
                                                                                                                                                                                                                                                                                                                                                70
                                                                                                                                                                                                                                                                                                                                                                 87 LIEHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTDKEARKFFRQIVSALDF 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       369 R 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     389 R 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      309 NHLIESLRNRTQNDGTVTYYLILDNRFRASSGYLGAEFQETMEGTPRMHPAESVASPVSH 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                333 ERLHRELRSEEENQEKMIYYLLLDRKER----YPSCEDQDLPPRNDVDPPRKRVDSPMLS 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          139 VHRDLKPENILLDSKCNVKIADFGLSNIMRDGHFLKTSCGSPNYAAPEVISGKLYAGPEV 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10 RFVGSYILDKTLGVGATGKVKLAKHSRTKEKVGVKIIKKDLFYDKPSLRLKIQREISVMK 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29 QYVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSE--SVLMKVERETAILK 86 ::|| | ::|| | | ::|| 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34 YRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVL-MKVEREIAILKLIEHPH 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19
                                                                                                                                                            CHKHRICHRDLKLENILLDMKLQIKIADFGMASLSIPNIMLKTFCGSPHYASPEVVSNEP
                                                                                                                                                                                                                                                                                                                    LMFHPHVIKIYDVLEDSKYLFLIIEYASKGELFNYLVEKRKLENREALKFFHEIISGLEY 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RVTIPEIRQHPWFQA--HLPRYLAVPPPD-----TVQQAKKIDEEILQEVINMGF--DR 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDR 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DVWSCGVILYALLCGTLPFDDENIPNLFKKIKGGIYTLPSHLSPGARDLIPRMLVVDPMK 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHRDIKPENILIDEKNNIRIADFGMASIQVGDSLLETSCGSPHYACPEVIKGEKYDGRRA 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSI 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEK 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IIRLYEVIETPTDIYLVMEYVNSGELFDYIVEKGRLQEDEARNFFQQIISGVEYCHRNMV 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YKLGRTLGIGSFGRVKIAEHALTGHKVAIKILNRRKIKNMEMEEKVRREIKILRLFMHPH 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19.3%; Score 793; DB 2; 41.8%; Pred. No. 1.1e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43.5%; Pred. No. 1.10 (27)
tive 73; Mismatches 116; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genome of an enslaved algal nucleus
MUID:11323671; PMID:11323671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2; Length 401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
            249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        X.; Re:
```

```
A;Reference number: Z17020
A;Accession: T10449
                                                                                                                                                Ş
                                                Š
                                                                                                    В
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                            ő
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 분
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Description: catalyzes the formation of peptidyl-serine-phosphate or peptidyl-threo C;Superfamily: AMP-activated protein kinase; protein kinase homology C;Keywords: ATP; phosphotransferase; serine/threonine-specific protein kinase F;6-260/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            probable serine/threonine-specific protein kinase (EC 2.7.1.-) - cucumber N;Alternate names: SNF1-related protein kinase C:Species: Cucumis sativus (cucumber) C:Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 20-Jun-2000 C:Accession: T10449 R:Gumpel, N.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Experimental source: cv. Masterpiece; cotyledon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Cross-references: EMBL:Y10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues: 1-504 < GUM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T10449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
298 NQLVESLRNRIQNEATVAYYLLLDNRFRVSS 328
                                              333 ERLHRELRSEEENQEKMIYYLLLDRKERYPS 363
                                                                                                                                   273 RLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFRDR 332
                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                   128 VHRDLKPENLLLDSKCNVKIADFGLSNIMRDGHFLKTSCGSPNYAAPEVISGKLYAGPEV 187
                                                                                                                                                                                                                                                                                                                                 153 CHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRA 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            357 FKRKK-----LFKQGK 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        377 PPRKRVDSPMLSRHGK 392
                                                                                                                                                                                                                                                                                                                                                                                  68 IIRLYEVIETPSDIYVVMEYVKSGELFDYIVEKGRLQEDEARNFFQQIISGVEYCHRNMV 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250 LLTINPQKRITIDKIKKHPWYKSSP-LPESC-----RISIONLSFASVQNPISNP--D 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            265 MIEVEPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLP------SNGELD 316
                                                                                                                                                                                                                                                                                                                                                                                                                                93 VLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSI 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 YRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSE-SVLMKVEREIAILKLIEHPH 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 19.3%;
Local Similarity 45.6%;
                                                                                                                                                                                    DVWSCGVILYALLCGTLPFDDENIPNLFKKIKGGIYTLPSHLSSGARELIPSMLVVDPMK 247
                                                                                       RITIPEIRQHPWFQA--HLPRYLAVPPPD----TMQQAKKIDEDILQEVVKMGF--DR
                                                                                                                                                                                                                   DMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEK 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YKLGKTLGIGSFGKVKIAEHALTGHKVAIKILNRRKIKNLDMEEKVRREIKILRLFMHPH 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEIISFLLPLQLVKDKKTLCGILSTKKPSFLRVLYRQLEWRKMKMDSVRSNLI---NEAN 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PDVLESMASLGCFRDRERLHRELRSEEENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 792.5; DB 2
Pred. No. 1.4e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2; Length 504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
```

protein H39E23.1 [imported] - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 10-May-2001 #sequence\_revision 10-May-2001 #:C;Accession: G89287

#text\_change 10-May-2001

The C. elegans Sequencing Consortium 2012-2018, 1998

Science R; anonymous,

```
A;Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog A;Reference number: A75000; MUID:99069613; PMID:9951916
A;Note: see websites genome wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_ele A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and A;Accession: G89287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-1246 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Map position: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:chr_V; PIDN:CAB09532.1; PID:g3878100; GSPDB:GN00023; CESP:H39E23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gene: H39E23.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                    602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101
722 LHLNSLLKSLLDSSAATSYETPRRPGIA-----GRRSEPSAATPRRRHQTMVVDARHL 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SSGAKEGGGGSP-AYHLPHPHPHPHPPQHAQ------YVGPYRLEKTL 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GKGNFAKVKLAKHVITGHEVAIKIIDKTALNPSSLQKLFREVKIMKQLDHPNIVKLYQVM 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVY 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KHPWYLGGKHEPD--PCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCFR---DRERL 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |||||: ||:|||| :: : : |:| ||| || ||: |:||| ||: ||:|| ||: ||:|| ||: ||:|| ||: ||:|| ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||: ||:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRADMWSCGVI 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPE 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSGKRRTVKVSPDGDHVTHNRKNSSSHARSTGQSGMSSRSAARRNDQDVHVGKYKLLKTI 66
                                                                                                                                                                                                            FRAEYKASGGPSVFQKPVRFQVDISSSEGPEPSPRRDGSGGGGIYSVTFTLISGP---- 698
                                                                                                                                                                                                                                                                                                                                                            LDKEEQIFLVLKDKPLSSIKADIVHAFL-------SIPSLSHSVLSQTS 643
                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGAVAANNGGIPSHRDHAQQQQYMNQLTSSTMMSKLINKTPAAGGTAATSSSSSSSAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SPVFSFSPEPGAGDEARGGGSPTSKTQ---TLPSRGPRGGGAGEQPPPPSARST-PLPGP 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GVITRE--HVTSSSASGSSASP-----SRYSRSSATATGASITAGSALASAANAQK 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RRPERKSMEVLSITDAGGGGSPVPTRRALEMAQHSQRSRSVSGASTGLSS---SPLSSPR 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LESVEKEKFEDIHATYLLLGERKSDMDASEITMAQSLLSHSSINV-----SSSLGQHPA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HRELRSEEENQEKMIYYLLLDRKERYPSCE---DQDLPPRNDVDPPRKRVDSPMLSRHGK 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KDRWMNVGYEDDELKPFIE------PPKDQIDEQRIEKLIQI--FQLGFNKAAI 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ETEQTLYLVLEYASGGEVFDYLVAHGRMKEKEARAKFRQIVSAVQYLHSKNIIHRDLKAE 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WRSRLNSIRNSFLGSPRFHRRKM----QVPTAEEMSSL---TPESSPELAKRSWFGNFIS 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PSYKPSSNTTQIAQIPPLENRNSTATSSAAQPSTGITGTRKIADPKGRIPLNSTAVQGHR 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PGSPRSSGGT-----PLHSPLHTPRAS----PTGTPGTTPPPSPGG-----GVGGAA 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HQQSSAAPSSGSSSSRRSSQNDAAATAAGGTVVMSGTRHGGVQMRAQPTSRQATISLLQP 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLVINPQRRSSLDNIM 306
                                                                                                                                            PAVQVPTEDATSSSDKEQQQQK--ASSETPKE------SNPIVWQN 721
                                                                    ---SRRFKRVVETIQAQLLSTHDQPSVQALADEKNGAQTRPAGAPP-----RSL 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.3%; Score 791.5; ilarity 29.3%; Pred. No. 3.2 Conservative 126; Mismatches
                                                                                                                                                                                                                                                                                    -STAPLQKSGSQISHAPTEPVIREDDDENNSENQNGNVP-LIGGVGPQTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .2e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                   683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Inglis, J.D.; Lee, M.; Hill, R.E. submitted to the EMBL Data Library, January 1993 A;Description: A novel protein kinase with homologues in yeast maps to mouse chromoso A;Reference number: S31333 A;Accession: S31333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probable serine/threonine-specific protein kinase (EC 2.7.1.-) kem - mouse
C;Species: Mus musculus (house mouse)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 04-Mar-2000
C;Accession: I48609; S31333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Inglis, J.D.; Lee, M.; Hill, R.E.
Mamm. Genome 4, 401-403, 1993
A;Title: Emk, a protein kinase with homologs in yeast maps
A;Reference number: 148609; MUID:93364122; PMID:8358177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase hom C;Keywords: ATP; phosphotransferase; serine/threonine-specific protein kinase F;51-304/Domain: protein kinase homology <KIN>F;59-67/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: EMBL:X70764; NID:g57919; PIDN:CAA50040.1; PID:g57920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: emk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: mRNA
A;Residues: 1-698,'K',700-702,'GRGLPTAAKASCTSGTCYCAGMAHQATRT',731-774 <ING2>
A;Cross-references: EMBL:X70764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-774 <ING1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: I48609
                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                   밁
                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         775 QTPPDTDRP 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             745 QPPPGRPDP 753
                                                                                                                                                                                                                                                                                                       377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150 YSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109
   461 ----AGDEARGGGSPTSKTQTLPSRGPRGGGAGEQPP-----PPSARSTPLPGPPGSPRS 511
                                                                                   445 T-AKVPASPLPGLDRKKTTPA---PSTNSVLSTSTNRSRNSPLLD-RASLGQASIQNGKD 499
                                                                                                                                                   406 TDAGGGGSPVP--TRRALEMAQHSQRSRSVSGASTGLS-SSPLSSPRSPVFSFSPEPG-- 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     49 HIGNYRLLKTIGKGNFAKVKLARHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLN 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVE 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHS 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PSKRGTLEQIMKDRWMNVG-HEDD--------ELKPYV-EPLLTTGP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENLLKKFLILN 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDTFCGSPPYAAPELFQGKKIDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HPNIVKLFEVIETEKTLYLVMEYASGGEVFDYLVAHGRMKEKEARAKFRQIVLHVQYCHQ 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                RDR-----ERLHRELRSESENQEKMIYYLLLDRKERYPSCEDQDLPPRNDVD---- 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGCF 329
                                                                                                                                                                                                                                                                                                                                                                           RDRVDGVNGLHTEEIQDSLVGQRYN-EVMATYLLLGYKSSEPEGDTITLKPRPSADLTNS 384
                                                                                                                                                                                                                           SAPSPSHKVQRSVSANPKQRRSSDQAVPAIPTSNSYSKKTQSNNAENKRPEEETGRKASS 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative 119;
                                                                                                                                                                                                                                                                                                   --PPRKRVDS-----PMLSRHGK-----RRPERKSMEVLSI 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19.2%; Score 788; DB 2; 30.1%; Pred. No. 2.8e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         261; Indels 172;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 774;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mouse chromosome 19.
```

27;

Db 69 KIYREVQIMKLUNIPHIIKLYQVMETKDMLYIVTEFAKNGEMFDHLTSNGHLSESEARKK 128 Qy 137 FRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHY 196	/ Match 19.0%; Score 780.5; DB 2; Length 798; Local Similarity 29.6%; Pred. No. 5.3e-21; Local Similarity 29.6%; Pred. No. 5.3e-21; Length 798; Bes 244; Conservative 105; Mismatches 265; Indels 209; Gaps 2 17 LPHPHPPPQHAQYVGPYLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVLM 76	RESULT 11  JC7500  qik protein - chicken  qik protein - chicken  yAlternate names: Qin-induced kinase  C;Species: Gallus gallus (chicken)  C;Date: 17-Nov-2000 #sequence_revision 17-Nov-2000 #text_change 17-Nov-2000  C;Accession: JC7500  R;Xia, Y:; Zhang, Z.; Kruse, U.; Vogt, P.K.; Li, J.  Biochem. Blophys. Res. Commun. 276, 564-570, 2000  A;Title: The new serine-threonine kinase, Qik, is a target of the qin oncogene A;Reference number: JC7500  A;Contents: Embryo fibroblasts A;Accession: JC7500  A;Molecule type: mRNA A;Residues: 1-798 <xia> A;Cross-references: GB:AFZ19232 C;Comment: This protein, a member of the AMPK/SNF1 family of serine/threonine C;Genetics: A;Gene: qik C;Keywords: protein kinase</xia>	Qy 512 SGGTPLHSPLHTPRASPTGTEGTT
128 128 128 134 134 134 134 134 134 134 134 134 134	מ	2000 cogene.	59 516 516 572 543 730 730 730

338		Q B 4	
171 278	2 HVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSICHRDLKPENLLLDEKNNIR :	D 04	
111 218	52 VHCITGQKVAIKIVNREKLSESVLMKVEREIAILKLIEHPHVLKLHDVYENKKYLYLVLE	Db Qy	
51 158	9 GGGSPAYHLPHPHPPPOHA	Db Qy	
ps 24	Query Match 18.7%; Score 767; DB 2; Length 1398; Best Local Similarity 28.2%; Pred. No. 2.5e-20; Matches 251; Conservative 112; Mismatches 324; Indels 202; Ga	W B O	
	Cross-references: FlyBase:FBgn0000667 Cross-references: FlyBase:FBgn0000667 Introns: 205/3; 227/1; 322/3; 688/3; 782/3; 814/2; 1363/3 Note: EG:22E5.8	70 70 70 7	
CAA21125.1	type: DNA : 1-1398 <mur> :ferences: EMBL:AL031765; NID:e1371523; PID:e1329905; PIDN:</mur>	CAAAA CCR	
daster.	begreenering the discar a chilomomie of blosophilia metallo mber: 217668 13741	A; R6	
<b>†</b>	Harris, D.; Barrell, B.  Harris, D.; Barrell, B.  Harris, D.; Barrell, B.  Harris, D.; Barrell, B.  Harris, D.; Barrell, B.	R; Mu subn	
2000	etical protein 22E5.8 - fruit fly (Drosophila melanogaster) les: Drosophila melanogaster : la-Nug-1999 #sequence_revision 13-Aug-1999 #text_change 17-Nov- saio: Tl3741	hypo C;Sg C;Sg	
	ILT 12	RESULT T13741	
	668LLQPACPQTSQTSATNGLP 686	Ъ	
	734 TRPAGAPPRSLOPPPGRPDPELSSSPRRGPPKDKKLLATNGTP 776	Qy	
667	6/7 PERUSSIGNATE LISSENERE REVETIT - CAPILLETHOUS YQALLADERNIGAQ	당 성	
626	05IKGFARQVCQSSSSRAARSAMS	) Db	
676	617 LSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRFQVDISSSEGPEPS	Qy	
604	557 CMGGASLLPVSFQEGRRASDTSLTQGLKAFRQQLRKNARAKGFLGLNK	рь	
616	SSITPESSPELAKRSWFGNFISLDKEEQIFLVLKDKP	Qγ	
575 556	530 -GTPGTTPPPSPGGGYGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPT	р Оу	
500	443 ISEEVRQEKELEDEIKAYDHPIRIPSNTSRRHTLAEVTTHFYQHAPPCIVISSSASPT	Db	
529	PGSPRSSGGTPLHSPLHTPRASPT	Qy	
442	ISPSSLLETT	뫄	
478	5 GASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGG-SPTSKTQTL	Qy	
384	350AEMPQDSLTSETL-	뮹	

393

292

339

```
probable serine/threonine-specific protein kinase (EC 2.7.1.-) PKIN1 - potal N; Alternate names: SNF1-related protein kinase (Species: Solanum tuberosum (potato) C; Species: Solanum tuberosum (potato) C; Date: 14-May-1999 #sequence_revision 14-May-1999 #text_change 20-Jun-2000 C; Accession: T07415 R; Halford, N.G.
                                                                                                                                               A;Description: catalyzes the formation of peptidyl-serine-phosphate or peptidyl-threonis C;Superfamily: AMF-activated protein kinase; protein kinase homology C;Keywords: ATP; phosphotransferase; serine/threonine-specific protein kinase F;15-269/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                  A;Gene: PKIN1
A;Introns: 62/1; 123/3; 184/3; 228/3; 290/3; 320/3; 348/3; 389/3; 466/3
C;Function:
                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-504 <HAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted to the EMBL Data Library, A; Reference number: Z16022 A; Accession: T07415
                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:X95997; NID:g1216279; PIDN:CAA65244.1
                                                                                                                                                                                                                                                                                                                              ;Genetics:
                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                            Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         624 RPVAISLSIDNNPSLANLRCREMMEAGGG-----PVGAVGVPLASKQLHQTISEFIIKQ
30 YVGPYRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKL-SESVLMKVEREIAILKLI 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QSHKMRS-YASSSSSSGVLAGSAGSYSKSLSQNLSRGS---SKSNCSGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DSPMLSRHGKRRPERKSMEVLSITDAGGGGSPV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---CPELLEHVLIAKYNLGAERQTSVEPSEDILRIMAEYVGIGSDKTR--ASLKKNTYDH 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STHDQPSVQALADEKNGAQTRPAGAPPRSLQPPPGRPDPELSSSPRRGP 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QVDISSSEGPEPSPRRD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEEQIFLVLKDKPLSSIKADIVHAFLSIPSLSHSVLSQTSFRAEYKASGGPSVFQKPVRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGGAAWRSRLNSIRNSFLGSPRFHRRKMQVPTAEEMSSLTPESSPELAKRSWFGNFISLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STEDCRALLQQSTAVAEGKDDPPKAESSVGGVP-----PPASTTPTSSTAGPES---- 726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGYLNGGGVEVDASGIPLP----MRYTPLPTAASPAPSNCSSTSSRVGRHSLSSSSPRSH 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SRSVSGASTGLSSSPLSSPRSPVFSFSPEPGAGDEARGGGSPTSK---TQTLPSRGPR-- 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSILAKDQCHKRLSRHQTVLMSERNAHAGATPTVPDPGPGYYAKYGPLQLPLPLTGHSHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VAAIYLLLQDRVSHKKEQSNGLGASALASSTSASRMIYSSRNDHQPTQQQSQQQSKTIST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EKMIYYLLLDR----KER-----YPSCEDQDLPPRNDVDPPRKR------V 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PDPCLEPAPGRRVAMRSL----PSNGELDPDVLESMAS-LGCFRDRERLHRELRSEEENQ 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QGSSSTDEGCETDQGNDPGSASQESKGSNGGGSGNANGGPTSHSSSDLTRLVGTTASG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EASKLFQTLQESPLPVEQRTKRRVHVGSTNGSGGDSGQETNDAK---SNGDSRSEKKVLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -GSAPCPGEING--------KTIKTMSSSSSFDSKANLGQSF--RYKMSA
                                                                           Similarity
                                                    Conservative
                                                                         18.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PPGSPRSSGGTPLHSPLHTPRASPTGTPGTTPPPSPGGG
                                                    74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----GSGGGGIYSVTFTLISGPSRRFKRVVETIQAQLL 714
                                                                         Score 766.5; DB 2; Pred. No. 1.1e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       March 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -GGGAGEQPPPPSARSTPLPG------
                                                    Mismatches
                                                 124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----PTRRALEMAQHSQR 429
                                                                                             Length
                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         925
                                                 27;
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         potato
                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                          밁
                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;25-33/Region: protein kinase ATP-binding motif F;48,67,142,144/Active site: Lys, Glu, Asp, Lys *status predicted F;147,151/Binding site: magnesium (Asn, Asp) *status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Description: catalyzes the formation of peptidyl-serine-phosphate or peptidyl-tic;Superfamily: AMP-activated protein kinase; protein kinase homology C;Keywords: ATP; magnesium; phosphotransferase; serine/threonine-specific protein F;17-271/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: mRNA
A;Residues: 1-511 <MUR>
A;Cross-references: GB:D26602; NID:g496384; PIDN:BAA05649.1; PID:g496385
C;Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Muranaka, I., .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Date: 28-Apr-1995 #sequence_revision C;Accession: A56009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 serine/threonine-specific protein kinase (EC 2.7.1.-) NPK5 -
C; Species: Nicotiana tabacum (common tobacco)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                            밁
                                                                      Š
                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A56009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Title: Characterization of tobacco protein kinase NPK5, tase of Saccharomyces cerevisiae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                            199
                                                                           213
                                                                                                                          139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           269
                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                            93
                                                                                                                                                                                                                                                                                                                              19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                                                                                                                                                                                                                                                                                                                          34 YRLEKTLGKGQTGLVKLGVHCITGQKVAIKIVNREKLSESVL-MKVEREIAILKLIEHPH 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match 18.7%; Score 766.5; DB 1; Local Similarity 44.4%; Pred. No. 1.1e-20;
                                                                                                                                                       CHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRA 212
                                                                                                                                                                                                                                                                                                                         YKLGKTLGIGSFGKVKIAEHTLTGHKVAVKILNRKKKNMEMEEKVRREIKILRLFMHPH 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FRDRERLHRELRSEEENQEKMIYYLLLDRKERYPS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DPMKRISVPDIRQHQWF--KIHLPRYLAVPPPDARQHLK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GRRADMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEV 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VHPHVIRLYEVIETPTDIYVVMEYVKSGELFDYIVEKGRLQEDEARKIFQQIIAGVEYCH 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DVWSCGVILYALLCGTLPFDDENIPNLFKKIKGGMISLPSHLSAGARDLIPRMLIVDPMK
                                                                      DMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEK 272
                                                                                                                          VHRDLKPENLLLDSKWNVKIADFGLSNIMRDGHFLKTSCGSPNYAAPEVISGKLYAGPEV
                                                                                                                                                                                                                     VLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCHSYSI 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PPRKRVDSPMLSRHGKRRPERK 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GPEVDVWSCGVILYALLCGTLPFDDENIPNLFKKIKSGVYTLPSHLSPLARDLIPRMLIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KNMVVHRDLKPENLLLDARRNVKIADFGLGNIMRDGHFLKTSCGSPNYAAPEVVSGKLYA 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SYSICHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYD 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EHPHVLKLHDVYENKKYLYLVLEHVSGGELFDYLVKKGRLTPKEARKFFRQIVSALDFCH 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EPEKRLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGELDPDVLESMASLGC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --DRDQLLDSLQKRIQDDATVAYYLLYDNRSMASSGYLGAEFQESVDCYSPGLFPNLDL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T.; Banno, H.; Machida,
Biol. 14, 2958-2965, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A56009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -QLSTGNGVSEESLRRPFRK
                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A56009; MUID:94217693;
                                                                                                                                                                                                                                                                                                                                                                                                                                 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-Apr-1995 #text_change 16-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PMID: 8164654
                                                                                                                                                                                                                                                                                                                                                                                                                                 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -KLDEEILQQVSRMGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 511;
                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -CEDQDLPPRNDVD 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            α
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         homolog of Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            common tobacco
                                                                                                                                                                                                                                                                                                                                                                                                                              15;
                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                          198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptidyl-threo
                                                                                                                                                                                                                                                                                                                                                                                                                            5
```

Š 밁 Š 밁 Ş В 9 B

715

823

766 604 727 544

881

RESULT 13

Š

Matches

õ 밁 õ 밁 Š 밁 Q 밁 Ş 망 Ωy 멍

> 485 568 430 508 383 448 347

678

```
Search completed: April 16, 2003, 12:33:02 Job time : 53 secs
                                                                                                       밁
                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Description: EC 2.7.1.-; serine/threonine-specific protein kinase AKIN11 [validated, complements SNF1 mutations in yeast complements SNF1 mutations in yeast C;Superfamily: AMP-activated protein kinase; protein kinase homology C;Keywords: ATP; phosphotransferase; serine/threonine-specific protein kinase
                                                                                                                                                  Š
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Bhalerao, R.P.; Salchert, K.; Bako, L.; Okresz, L.; Szabados, L.; Muranaka, T.; Machit Proc. Natl. Acad. Sci. U.S.A. 96, 5322-7, 1999
A;Title: Regulatory interaction of PRLI WD protein with Arabidopsis SNF1-like protein ki A;Reference number: Z25116; MUID:99238528; PMID:10220464
A;Accession: T52633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 serine/threonine-specific protein kinase (EC 2.7.1.-) AKIN11 [validated] - Arabidopsis N;Alternate names: SNF1 protein kinase omolog AKIN11 C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 24-Oct-2000 #sequence_revision 24-Oct-2000 #text_change 03-Nov-2000 C;Accession: T52633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: AKIN11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:x99279; PIDN:CAA67671.1
A;Experimental source: cultivar Columbia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 18.5%; Score 761.5; DB 2
Best Local Similarity 44.2%; Pred. No. 1.7e-20;
Matches 148; Conservative 70; Mismatches 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Molecule type: mRNA
Residues: 1-512 <BHA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                               308 -- DRNQVLESLRNRTQNDATVTYYLLLDNRFRVPS
                                                                                                                                                                                                                                      273 RLSLEQIQKHPWYLGGKHEPDPCLEPAPGRRVAMRSLPSNGE----LDPDVLESMASLGC 328
                                                                                                                                                                                                                                                                                                  200 DVWSCGVILYALLCGTLPFDDENIPNLFKKIKGGIYTLPSHLSSEARDLIPRMLIVDPVK 259
                                                                                                                                                                                                                                                                                                                                                213 DMWSCGVILFALLVGALPFDDDNLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVEPEK 272
                                                                                                                                                                                                                                                                                                                                                                                                       140 VHRDLKPENLLLDSRCNIKIADFGLSNVMRDGHFLKTSCGSPNYAAPEVISGKLYAGPEV 199
                                                                                                                                                                                                                                                                                                                                                                                                                                     153 CHRDLKPENLLLDEKNNIRIADFGMASLQVGDSLLETSCGSPHYACPEVIKGEKYDGRRA 212
                                                                                                                                               329 FRDRERLHRELRSEEENQEKMIYYLLLDRKERYPS 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309 NSLVASICNRVQNEGTVAYYLLLENGFRASSGYMGAEFQE 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        333 ERLHRELRSEEENQEKMIYYLLLDRKER----YPSCEDQD 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34 YRLEKTLGKGOTGLVKLGVHCITGQKVAIKIVNREKLSESVL-MKVEREIAILKLIEHPH 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20 YKLGKTLGIGSFGKVKIAEHVVTGHKVAIKILNRRKIKNMEMEEKVRREIKILRLFMHPH 79
                                                                                                                                                                                              RITIPEIRQHRWF--QTHLP------RYLAVSPPDTVEQAKKINEEIVQEVVNMGF 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RMTIPEIRMHPWFQA--HLPRYLAVPPPD-----TMQQAKKIDEDILQEVVKRGF--DR 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 19; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
```

. •